

# MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

## HELP WANTED SITUATIONS WANTED

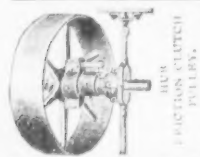
Advertisements under these two headings will be published free of charge in the MANUFACTURERS' RECORD. Such advertisements must not exceed four lines, or about twenty-five words, and four consecutive insertions will be given in our columns without charge. Replies addressed in our care will be forwarded to advertisers. The extended circulation of the MANUFACTURERS' RECORD and the care with which its pages are read make this opportunity one of exceptional value. We offer it freely to our patrons and friends, and ask them to make liberal use of it.

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 530.

\$4.00 per year.  
Single Copy  
10 Cents.

VOL. XXII.  
No. 16.

Baltimore, November 18, 1892.



## THE JAMES SMITH WOOLEN MACHINERY CO.

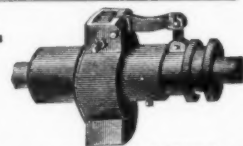
WOOLEN MACHINERY AND CARD CLOTHING OF EVERY DESCRIPTION,  
SHAFTING, HANGERS, PULLEYS AND FRICTION CLUTCHES.

Hub Friction Clutch Pulleys will run 1,000 Revolutions.

411 to 421 Race Street,

Made in sizes from 2 up to 1,000 horse-power.  
More than ten thousand in use.

PHILADELPHIA, PA.



FRICTION CUT-OFF COUPLING.

## SPECIAL NOTICE.

### BRANCH OFFICES

114a Queen Victoria St., London, E. C., Eng.  
100-104 W. Washington St., Chicago, Ill.  
203 St. James Street, Montreal, Can.  
201-203 Congress St., Boston, Mass.  
615 N. Fourth St., St. Louis, Mo.  
26 S. Water St., Cleveland, Ohio.

Two handsome photo-engraved display sheets entitled  
"RECENT IMPROVEMENTS IN AIR COMPRESSORS,"  
"RECENT IMPROVEMENTS IN ROCK DRILLS,"

mailed free to any one who will cut out this advertisement and mail it to us with his name and address.

THE INGERSOLL-SERGEANT DRILL CO., NO. 10 PARK PLACE, NEW YORK.

## The BROWN HOISTING & CONVEYING MACHINE CO., CLEVELAND, OHIO, U. S. A.

MANUFACTURERS AND SOLE PROPRIETORS OF THE PATENTS, APPLICATIONS AND DESIGNS UNDER WHICH THE BROWN HOISTING AND CONVEYING APPARATUS AND VARIOUS TRAMWAYS FOR IT ARE BUILT.

NEW AND COMPLETE LABOR-SAVING SYSTEMS FOR HANDLING OF MATERIALS OF ALL KINDS. MACHINERY SPECIALLY ADAPTED FOR HANDLING PHOSPHATE.

## The Brown Patent

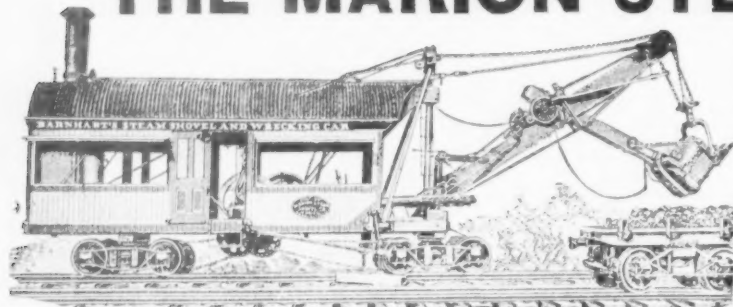
Cable Tramway System.  
Suspended Beam Tramway System.  
Bridge Tramway System.

Shed Tramway System.  
Warehouse Tramway System.  
Sewer Machine Tramway System.  
Continuous Elevated Tramway System.

THE FAYETTE-BROWN PATENT AUTOMATIC FURNACE HOIST.

## THE MARION STEAM SHOVEL CO.

MANUFACTURERS OF

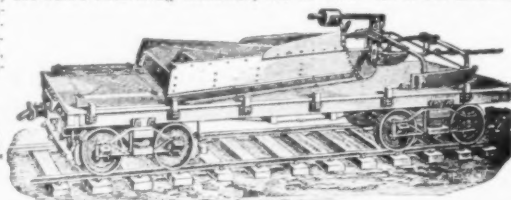


Barnhart's Steam Shovels, Dredges, Ditching Dredges, Railroad Ditchers, Wreckers, Ballast Unloaders, &c. Our Steam Shovels are largely used on Railroads and by Contractors, Brick Manufacturers, and in excavating Iron Ore, Handling Stock Ore, Stripping Coal Fields and Stone Quarries, and are a most desirable machine for any use where excavating machinery can be used. All of our machines guaranteed to give entire satisfaction; otherwise may be returned at our expense. For illustrated Catalogue, Photographs, and any further information desired, address

THE  
Marion Steam Shovel Co.

601 WEST CENTRE ST.

Marion, Ohio.



BARNHART'S BALLAST UNLOADER. No center rib or leader is required.

## THE SOUTHERN SAW MFG. CO.

ATLANTA, GA.

Manufacturers of

## Highest Grade Saws

Also Dealers in Saw Mill Specialties.

OUR INSERTED TOOTH SAWS have been thoroughly tested on all feeds and in all kinds of timber. Saw mill men concede it to be the strongest and easiest adjusted on the market. We guarantee price and quality.

Prompt Attention Given to All Kinds of Repair Work and Satisfaction Guaranteed.  
Write for Catalogue and Prices.



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# GANG EDGERS.

WAY DOWN IN PRICES—WAY UP IN QUALITY.

SAW MILLS With the Best Changeable Feed in the World.

Kentucky Self-feed Shingle and Lath Machines, Swing Saws,

DO NOT BUY BEFORE YOU WRITE TO

EQUALIZERS, CANT HOOKS, PEAVIES, ETC., ETC.

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LOUISVILLE, KY., U. S. A.

Clean Your Boiler Tubes with Abrams Expansion Flue Brush.

Write ST. LOUIS STEEL WIRE BRUSH CO.  
ST. LOUIS, MO., for Circular.

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**Acid Chambers.**

Charleston Lead Co., Charleston, S. C.  
Herman Poole, New York, N. Y.  
Valk & Murdoch Iron Works, Charleston, S. C.

**Air Compressors.**

M. C. Bullock, Mfg. Co., Chicago, Ill.  
Ingersoll-Sergeant Rock D. Co., New York, N. Y.  
Morris Machine & Iron Co., Dover, N. J.  
Rand Drill Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

**Anti-Friction Metals.** [See *Phosphor-Bronze*.]

Paul S. Reeves, Philadelphia, Pa.  
Amer. Imp. Anti-Friction Metal Co., Mobile, Ala.

**Architects.**

Collins & Hackett, Staunton, Va.  
Edward Barrath & Co., Chicago, Ill.  
Teague & Mayre, Newport News, Va.  
A. G. Bauer, Raleigh, N. C.  
Gustaf Bottiger, Winston, N. C.  
D. G. Zeigler, Charleston, S. C.  
Charles H. Read, Richmond, Va.  
Wilson & Huggins, Roanoke, Va.  
Griswold & Nunan, Owensboro, Ky.  
C. R. Makepeace & Co., Providence, R. I.  
Lockwood, Greene & Co., Boston, Mass.  
Drew, Baldwin & Co., New York, N. Y.

**Architectural Iron Work.**

Covington Machine Co., Covington, Va.  
E. M. Hopkins, Savannah, Ga.  
Toledo Wire & Iron Works, Toledo, O.  
Toledo Cornice Works, Toledo, O.  
Cushman Iron Co., Roanoke, Va.  
Champion Iron Co., Kenton, O.  
J. E. Bolles & Co., Detroit, Mich.  
Fred. J. Meyers Mfg. Co., Covington, Ky.  
T. H. Brooks & Co., Cleveland, O.  
P. Duvinage & Co., Brooklyn, N. Y.

**Artesian Well Tools and Supplies.** [See *Well Tools and Supplies*.]**Rabbitt Metal.** [See *Anti-Friction Metal*.]**Bankers and Brokers.**

N. W. Harris & Co., Chicago, Ill.  
L. Breckinridge Cabell, New York, N. Y.  
Godfrey & Train, New York, N. Y.  
Hopkins, Dwight & Co., New York, N. Y.  
Edward Morton & Co., New York, N. Y.  
Exchange Banking & Trust Co., Charleston, S. C.  
von Hemert & Co., Roanoke, Va.  
John L. Williams & Son, Richmond, Va.  
Middendorf, Oliver & Co., Baltimore, Md.

**Barrel Machinery.** [See *Woodworking Machinery*.]

Crescent Mfg. Co., Cleveland, O.  
E. & B. Holmes, Buffalo, N. Y.

**Bath Tubs.**

Haines, Jones & Cadbury Co., Philadelphia, Pa.

**Bearings.**

N. American Metal Co., Long Island City, N. Y.

**Belting.**

N. Y. Belt & Pack Co., Ltd., New York, N. Y.  
E. M. Freese & Co., Galion, O.  
Cameron & Barkley Co., Charleston, S. C.  
Henry Popham & Son, East Newark, N. J.  
Main Belting Co., Philadelphia, Pa.  
Chesapeake Belting Co., Baltimore, Md.  
Gandy Belting Co., Baltimore, Md.  
Shultz Belting Co., St. Louis, Mo.  
Smith-Courtney Co., Richmond, Va.  
H. W. Caldwell & Son Co., Chicago, Ill.  
American Supply Co., Providence, R. I.

**Belting.** (Chain.)

H. W. Caldwell & Son Co., Chicago, Ill.  
F. H. C. Mey, Buffalo, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Engineer'g Co., Nicetown (Phila.), Pa.

**Belt Lacing.**

American Supply Co., Providence, R. I.  
Henry Popham & Son, East Newark, N. J.  
Shultz Belting Co., St. Louis, Mo.  
Bristol's Mfg. Co., Waterbury, Conn.

**Blinds.**

Adams & Woodson, Lynchburg, Va.  
Monroe Mfg. Co., Lima, O.

**Blowers and Exhaust Fans.**

N. England Vent. & Heat. Co., Providence, R. I.  
West & Branch, Richmond, Va.  
Davidson Ventilating Fan Co., Boston, Mass.  
Geo. P. Clark, Windsor Locks, Conn.  
B. F. Sturtevant Co., Boston, Mass.

**Boiler Appliances.**

Sherwood Mfg. Co., Buffalo, N. Y.  
Penberthy Injector Co., Detroit, Mich.  
Jenkins Bros., New York, N. Y.

**Boiler Compound.**

Kehrbahn & Co., Baltimore, Md.  
H. H. Mansfield, New York, N. Y.

**Boiler Fronts and Fittings.** [See *Boilers*.]

Vulcan Iron Works Co., Toledo, O.

**Boilers.** [See *Machinery*.]

Aultman & Taylor Machinery Co., Mansfield, O.  
S. C. Forsaith Machine Co., Manchester, N. H.  
Delbert Engineering Co., Ltd., New Orleans, La.  
W. C. Leffel Co., Springfield, O.

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Golley & Finley Iron Works, Lima, O.

Ravenna Boiler Works, Ravenna, O.  
J. H. McEwen Mfg. Co., Ridgway, Pa.

Cameron & Barkley Co., Charleston, S. C.  
Holyoke St. Boiler & Iron Wks., Holyoke, Mass.

Geo. M. Clapp, New York.  
Cline Engine & Machine Co., Plymouth, O.

Harrisburg Fdy. & Mch. Works, Harrisburg, Pa.  
American Well Works, Aurora, Ill.

Bass Foundry & Mch. Works, Ft. Wayne, Ind.  
Geo. R. Lombard & Co., Augusta, Ga.

Geo. J. Fritz, St. Louis, Mo.  
Chandler & Taylor Co., Indianapolis, Ind.

Enterprise Boiler Co., Youngstown, O.  
West & Branch, Richmond, Va.

H. P. Edmond, Richmond, Va.  
Struthers, Wells & Co., Warren, Pa.

Babcock & Wilcox Co., New York, N. Y.  
H. Dudley Coleman Mch. Co., Ltd., New Orleans.

Greer Machinery Co., Knoxville, Tenn.  
N. Y. Safety Steam Power Co., New York, N. Y.

Buckeye Engine Co., Salem, O.  
Stearns Mfg. Co., Erie, Pa.

Smith-Courtney Co., Richmond, Va.  
Skinner Engine Co., Erie, Pa.

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Jas. Leffel & Co., Springfield, O.

Cleveland & Hardwick, Erie, Pa.  
Dan Shea & Co., Memphis, Tenn.

Oil Well Supply Co., Pittsburgh and New York.  
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Valk & Murdoch Iron Works, Charleston, S. C.  
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S. D. Warfield Co., Baltimore, Md.

Valley Iron Works, Williamsport, Pa.

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**Bolts, Rivets and Nuts.**

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Pennsylvania Steel Co., Steelton, Pa.  
Hoopes & Townsend, Philadelphia, Pa.

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Coaldale Brick & Tile Co., Birmingham, Ala.

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F. H. C. Mey, Buffalo, N. Y.  
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George Carnell, Philadelphia, Pa.  
Walworth Iron Fdy. & Mfg. Co., Cleveland, O.  
C. & A. Potts & Co., Indianapolis, Ind.  
Anderson Fdy. & Mch. Wks., Anderson, Ind.  
H. Brewer & Co., Tecumseh, Mich.  
E. M. Freese & Son, Galion, O.  
J. W. Penfield & Son, Willoughby, O.  
Frey-Sheckler Co., Bucyrus, O.  
Chambers Bros. Co., Philadelphia, Pa.  
Fletcher & Thomas, Indianapolis, Ind.  
C. W. Raymond & Co., Dayton, O.

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S. W. Frescoln, New York, N. Y.  
American Bridge & Iron Co., Roanoke, Va.

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Texas Coal Tar & Asphaltum Co., Dallas, Tex.

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W. R. Burgess, Sanford, Fla.  
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Irwin Tucker, Newport News, Va.  
McClure & Maxwell, Knoxville, Tenn.  
T. H. Sampson, New Orleans, La.  
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American Supply Co., Providence, R. I.  
Brown & King Supply Co., Atlanta, Ga.  
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C. W. Raymond & Co., Dayton, O.  
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**Cars.** (Passenger and Freight.) [See *Railroad Equipment and Supplies*.]**Car Wheels.**

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**Castings.** (Brass and Bronze.)

Covington Machine Co., Covington, Va.  
Crown Smelting Co., Chester, Pa.  
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Paul S. Reeves, Philadelphia, Pa.

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Covington Machine Co., Covington, Va.  
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Chattanooga Fdy. & P.Wks., Chattanooga, Tenn.  
Howard-Harrison Iron Co., Bessemer, Ala.  
Vulcan Iron Works Co., Toledo, O.  
Todd Pulley & Shafting Works, E. St. Louis, Ill.  
Struthers, Wells & Co., Warren, Pa.  
Manly Machine Co., Dalton, Ga.  
Walker Mfg. Co., Cleveland, O.  
McLanahan & Stone, Hollidaysburg, Pa.

**Castings.** (Malleable Iron and Steel.)

Balto. Mal. Iron & Steel Cast. Co., Balto., Md.  
Chester Steel Castings Co., Chester, Pa.

**Ceiling.** (Metal.) [See *Roofing*.]

Kinnear & Gager Co., Columbus, O.

**Cement.**

Howard Hyd. Cement Co., Chattanooga, Tenn.

**Chemicals.**

Standard Guano & Chemical Mfg. Co., New Orleans, La.

**Chemists.**

Iron Masters' Laboratory, Warrenton, Va.  
John M. McCandless, Atlanta, Ga.  
John Sanderson, Middlesborough, Ky.  
Frederic P. Dewey, Washington, D. C.  
Walter M. Stein, Philadelphia, Pa.  
Philadelphia Metallurgical Wks., Philadelphia, Pa.  
Leducs Chemical Laboratory, New York.  
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Herman Poole, New York, N. Y.

**Clocks.** (Watchman's.)

C. D. Bernsee, New York, N. Y.

**Clutches.** (Friction.)

J. H. & D. Lake, Hornellsville, N. Y.  
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**Coke Ovens.**

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**Contractors' Machinery and Supplies.**

[See *Hoisting Machinery*.]  
Lidgerwood Mfg. Co., New York, N. Y.  
American Hoist & Derrick Co., St. Paul, Minn.  
Vulcan Iron Works Co., Toledo, O.  
Marion Steam Shovel Co., Marion, O.  
Bucyrus Stn. Shovel & Dredge Co., Bucyrus, O.  
Contractors' Plant Mfg. Co., Buffalo, N. Y.  
Ryan-McDonald Mfg. Co., Baltimore, Md.  
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Brown Hoist & Con. Mch. Co., Cleveland, O.  
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F. H. C. Mey, Buffalo, N. Y.  
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The Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Engineer'g Co., Nicetown (Phila.), Pa.

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Dudley E. Jones Co., Little Rock, Ark.  
Carver Cotton Gin Co., E. Bridgewater, Mass.  
National Cotton Gin Co., Boston, Mass.  
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Talbot & Sons, Richmond, Va.  
Valk & Murdoch Iron Works, Charleston, S. C.

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Cardwell Machine Co., Richmond, Va.  
M. C. Cogswell, New York, N. Y.  
George J. Fritz, St. Louis, Mo.  
Talbot & Sons, Richmond, Va.

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Thompson & Campbell, Philadelphia, Pa.  
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Southern Equipment Co., Chattanooga, Tenn.  
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Copeland & Bacon, New York, N. Y.  
Foss Mfg. Co., Springfield, O.  
James H. Lancaster, New York, N. Y.  
Cyclone Pulverizer Co., New York, N. Y.  
F. D. Cummer & Son Co., Cleveland, O.  
W. F. Mosser & Son, Allentown, Pa.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Union Foundry & Mch. Wks., Rockaway, N. J.  
Thompson & Campbell, Philadelphia, Pa.  
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P. M. Walton, Philadelphia, Pa.  
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American Ore Machinery Co., New York, N. Y.  
Frisbee-Lucop Mill Co., New York, N. Y.  
Stedman's Fdy. & Mch. Works, Aurora, Ind.  
Walker & Elliott, Wilmington, Del.  
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James Murray & Son, Baltimore, Md.

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H. A. Williams Mfg. Co., Boston, Mass.  
Lackawanna Lubricating Co., Scranton, Pa.  
Sherwood Mfg. Co., Buffalo, N. Y.

**Cutter Heads.**

Samuel J. Shimer & Sons, Milton, Pa.

**Derrick.**

American Hoist & Derrick Co., St. Paul, Minn.

**Draughtsmen.**

A. N. Houghton, Boston, Mass.

**Dredges and Excavators.**

Vulcan Iron Works Co., Toledo, O.  
Urie Dredge Mfg. Co., Kansas City, Mo.  
Marion Steam Shovel Co., Marion, O.  
Copeland & Bacon, Philadelphia, Pa.  
Bucyrus Stn. Shovel & Dredge Co., Bucyrus, O.

**Drills.** (Prospecting.)

Sullivan Machinery Co., Chicago, Ill.  
M. C. Bullock Mfg. Co., Chicago, Ill.  
General Electric Co., New York, N. Y.

**Drills.** (Rock.)

Pech Mfg. Co., Chicago, Ill.  
Sullivan Machinery Co., Chicago, Ill.  
M. C. Bullock Mfg. Co., Chicago, Ill.  
Rand Drill Co., New York, N. Y.  
Ingersoll-Sergeant Rock D. Co., New York, N. Y.

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Cincinnati Tool Works, Cincinnati, O.  
Graham Twist Drill & Chuck Co., Detroit, Mich.  
New Process Twist Drill Co., Taunton, Mass.

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H. Bickford, Lakeport, N. H.  
Draper Machine Tool Co., Worcester, Mass.  
Silver Mfg. Co., Salem, O.  
Stow Mfg. Co., Binghamton, N. Y.  
Stow Flexible Shaft Co., Ltd., Philadelphia, Pa.  
Pennsylvania Mch. Co., Ltd., Philadelphia, Pa.

**Dry Kilns.**

F. D. Cummer & Son Co., Cleveland, O.  
B. F. Sturtevant Co., Boston, Mass.

**Ejectors.**

Sherwood Mfg. Co., Buffalo, N. Y.  
Pancoast & Maule, Philadelphia, Pa.  
Penberthy Injector Co., Detroit, Mich.

**Electric Light and Power Plants.**

Simpson Electric Mfg. Co., Chicago, Ill.  
John E. Beggs Mch. & Sup. Co., New York, N. Y.  
Jordan & MacLeod, Washington, D. C.  
H. Ward Leonard & Co., New York, N. Y.  
S. D. Warfield Co., Baltimore, Md.  
Rockford Electric Mfg. Co., Rockford, Ill.  
Smith, Saunders & Collins, Newton, N. C.  
General Electric Co., New York, N. Y.  
Heisler Electric Co., Philadelphia, Pa.

**Electric Railway Equipment.**

New York Equipment Co., New York, N. Y.  
G. T. Woods Mfg. Co., New York, N. Y.  
H. Ward Leonard & Co., New York, N. Y.  
S. W. Frescoln, New York, N. Y.  
General Electric Co., New York, N. Y.

**Electrical Supplies.**

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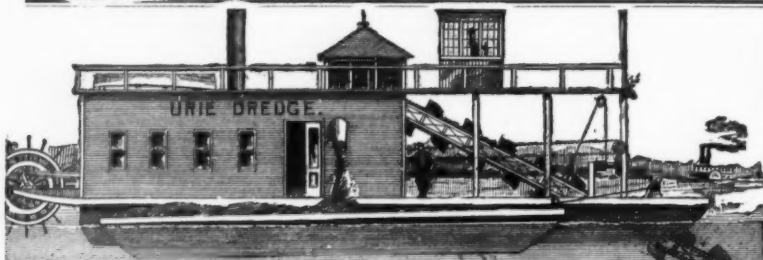
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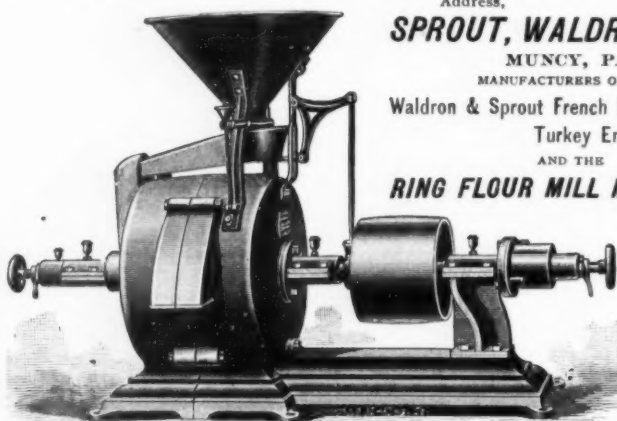
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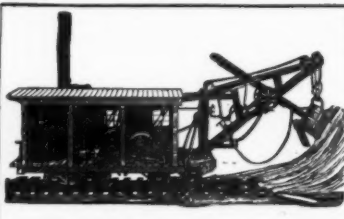
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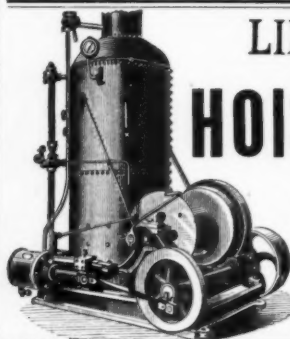
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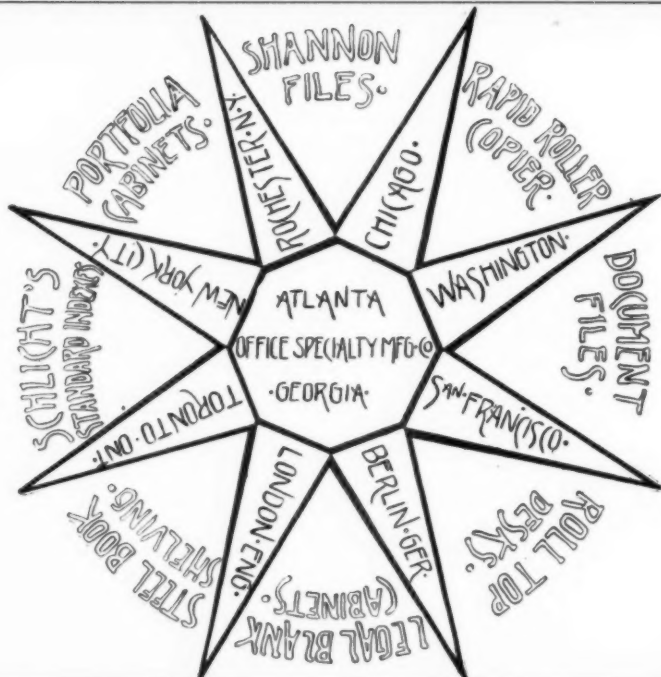
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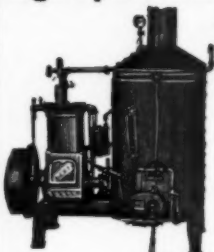
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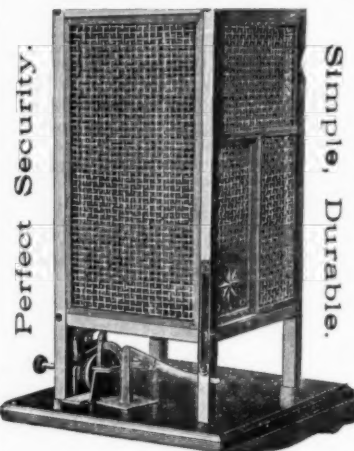
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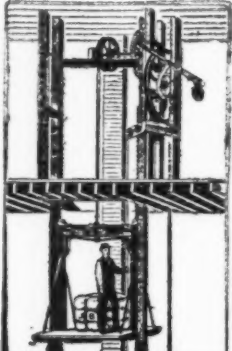
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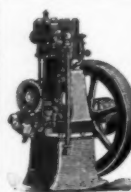


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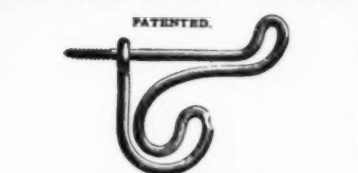
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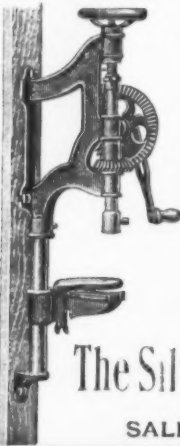
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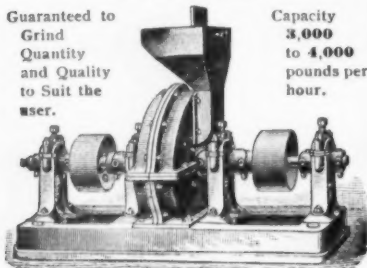
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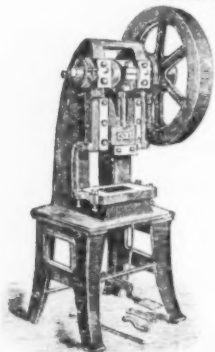
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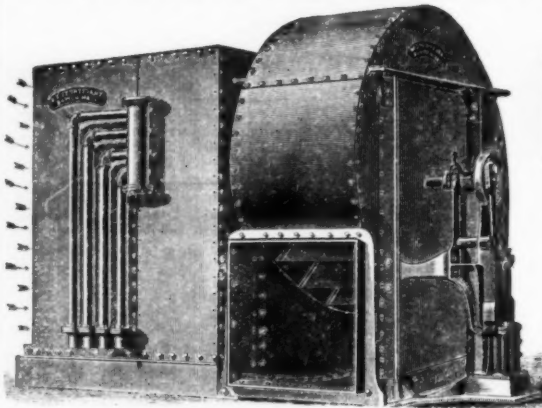
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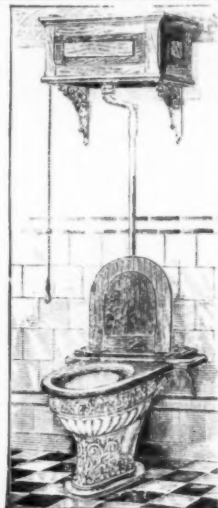
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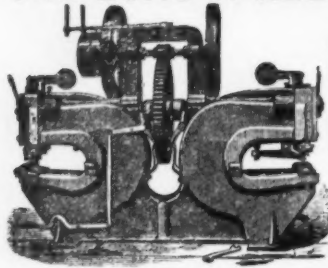
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Heavy Double Machine.

Double, Single, Angle-Bar, Gang, Horizontal, Twin, Boller, Spacing, Gate, Multiple, BELT and STEAM-DRIVEN

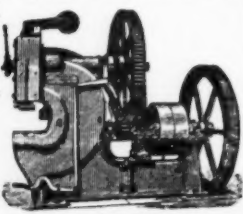
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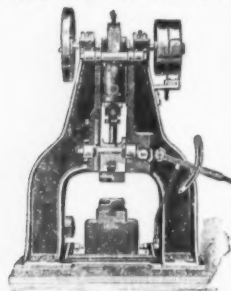
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**A LONG FELT WANT SUPPLIED.**

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TAKES THE MINIMUM OF POWER AND GIVES THE MAXIMUM OF EFFICIENCY.

The operator can control perfectly the force of the first or any succeeding blow and stop the hammer instantly.

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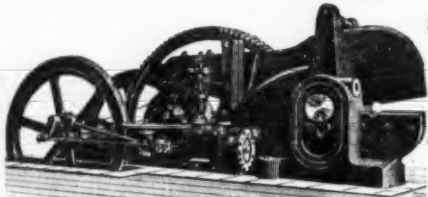
FOR 20 YEARS these Hammers have been in the market and during all that time have been acknowledged the very best. The material we use and our method of construction are the result of ripe experience and not the jumped-at conclusions of amateurs. Send for circulars and price lists.

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SHEET  
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MILLS.



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by 12 feet long,  
To 22 inches square  
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With splined screw feed, with or without power, cross feed and rod feed.

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For General Machine and Jobbing Shop, Electrical and Experimental Work.

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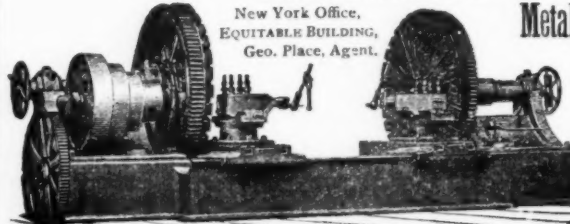
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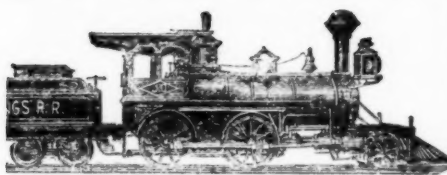
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All gauges of track for Passenger and Freight Service, Logging Railroads, Mines, Blast Furnaces, Steel Works, Coke Ovens, Contractors' Work and Plantations.

All sizes and patterns, adapted to steep grades and sharp curves. Noiseless and smokeless. Cheaper and more reliable and efficient, and less objectionable than electric or cable system.

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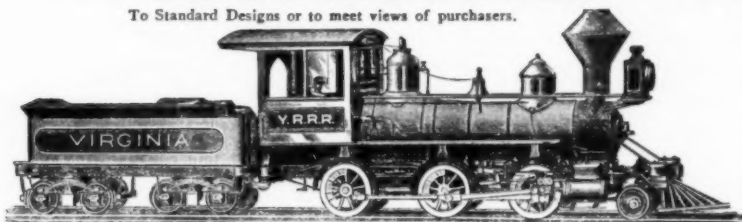
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Established  
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To Standard Designs or to meet views of purchasers.



**MOTORS FOR STREET OR SUBURBAN TRAFFIC AND MINE ENGINES.**  
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**STEEL RAILS****PENNSYLVANIA**

Standard Sections  
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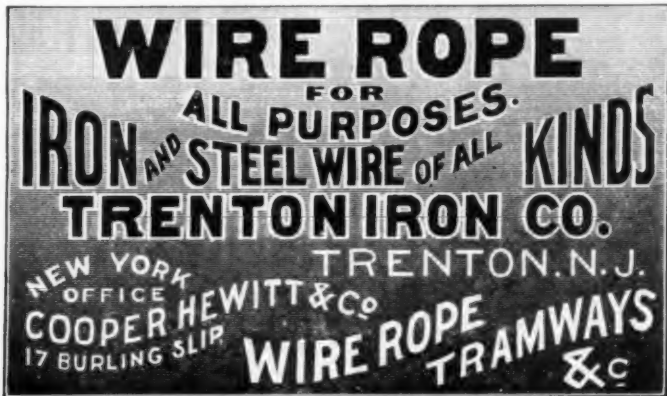
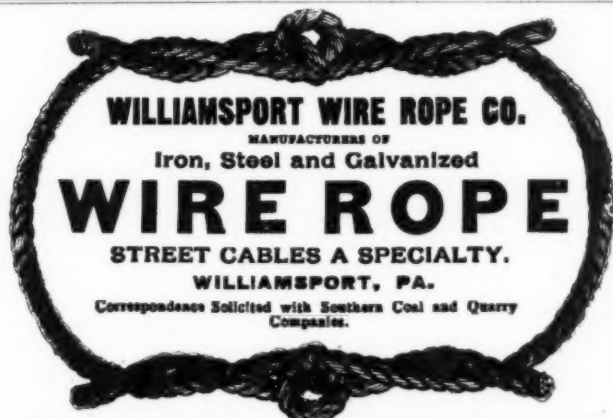
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MANUFACTURERS of the best metal for journal bearings of any kind—especially for Steamships, Railroad and Street Cars, Sugar Mills, Rolling Mills, Saw Mills, etc. Especially adapted to high speed journals. This metal is warranted not to HZAT or CUR the journals, and its lasting qualities make it superior to any other metal. Its excellence makes it the most economical metal.

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It is tougher and more durable than all other metals.

It is the best metal known where great pressure is required.

It runs with less friction than any other metal.

It will stand the highest rate of speed and will not heat or cut.

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Established 1831.

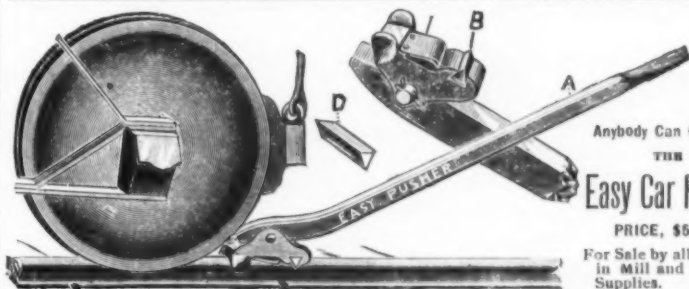
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LOCOMOTIVE ENGINES, adapted to every variety of service and built accurately to standard gauges and templates. LOCOMOTIVES FOR LOGGING Railroads and Sugar Estates.

**COMPOUND LOCOMOTIVES.**

STEAM TRAMWAY MOTORS, MINE LOCOMOTIVES, FURNACE LOCOMOTIVES.

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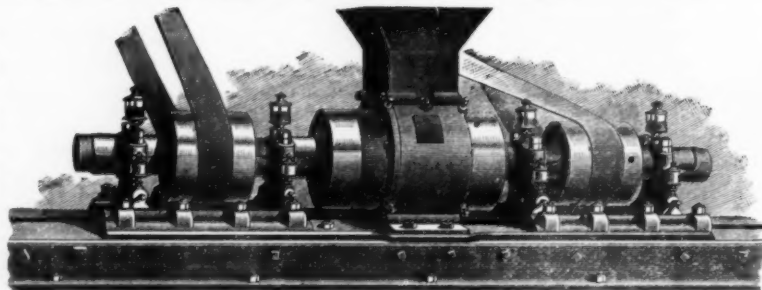
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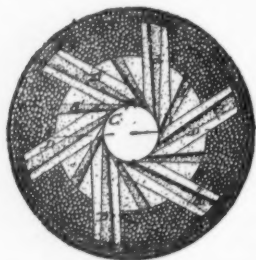
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The only Crusher and Pulverizer combined for reducing ores, phosphate rock, cement and all hard and refractory material, developing an entirely new principle (rock grinding rock) thus reducing wear on machine to a minimum. Unequaled in capacity and economy. A large number in successful operation. Used and endorsed by the most prominent engineers and users of grinding machinery. Grinds from one



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Also sole manufacturers of Patent Rock Emery Mill Stones. Superior to the best French Buhr Stones, requiring little dressing, and much more durable, emery being harder and more cutting. One pair Emery Stones at about same cost will outwear two pair Buhrs. The saving in dressing alone will more than pay first cost. Will fit any Buhr Mill Frame. Send for circulars and testimonials, and mention this paper.

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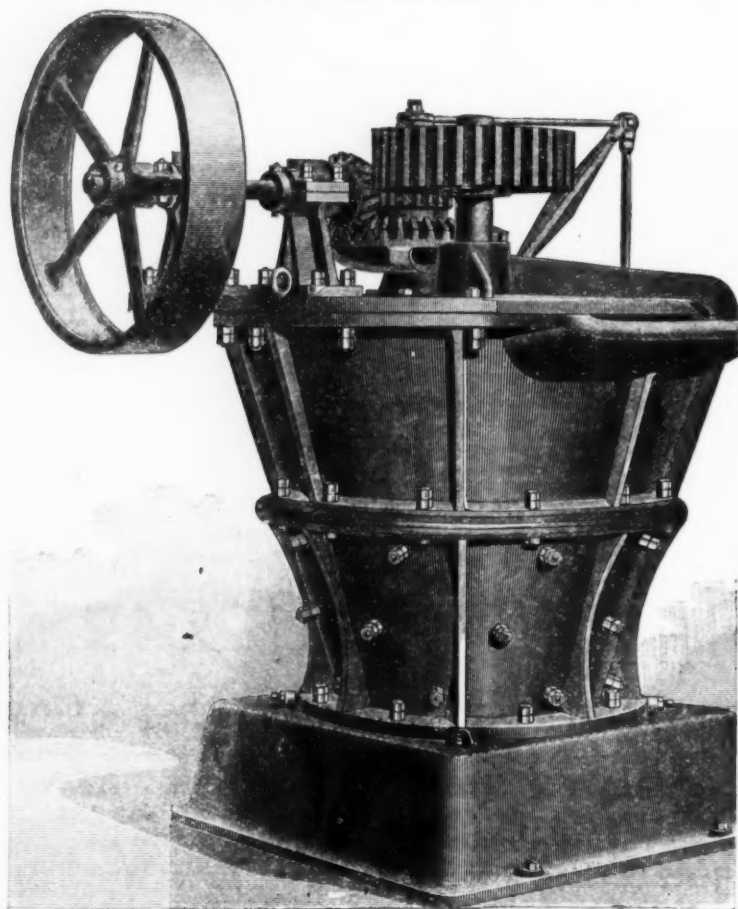
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## The Scientific Crusher

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For Whole Skulls, Other Bones and Fertilizer Materials  
Crushing and Grinding Machinery a specialty



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Rolls, Screens, Engines, Mining and Milling Machinery  
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BECKETT FOUNDRY & MACHINE CO., Arlington, N. J., 30 minutes from New York City via Erie Railroad.

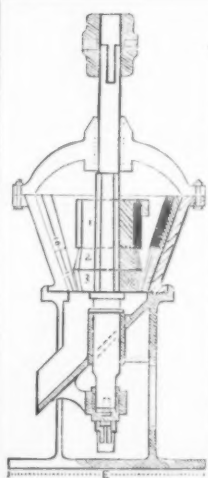
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Crushing, Grinding and Pulverizing Machinery  
60 NEW STREET, NEW YORK.



Steel Ore Washer Shaft.  
McLanahan & Stone, Hollidaysburg, Pa.



Phosphate and Cement Rock Crusher,

MANUFACTURED BY

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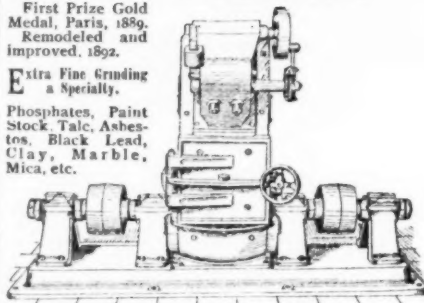
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First Prize Gold Medal, Paris, 1889. Remodeled and improved, 1892.

Extra Fine Grinding a Specialty.

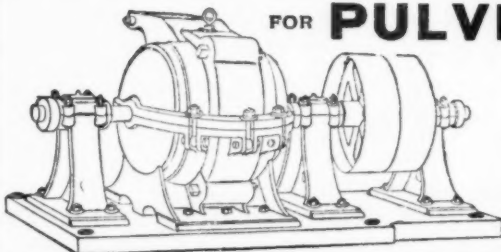
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Separates Absolutely Without Screens.

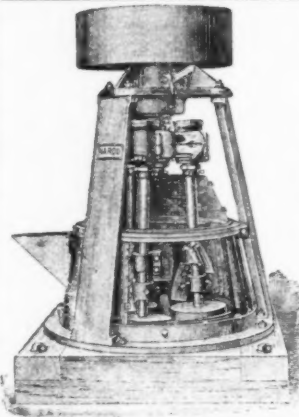
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At half the cost of that by Buhr Stones. Used by leading Cement and Fertilizer Manufacturers. Finished product. No Tailings. Capacity up to three tons per hour. Record of constant use for six years.

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145 Broadway, New York.



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TESTIMONIAL LETTERS.

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Gentlemen—After running the Narod Mill steadily for the past eight months, we have no hesitation in stating that in our opinion it is a good thing. It grinds three to four tons of South Carolina phosphate rock per hour, and requires but 18 horse-power. Since starting it has run smoothly without heating and demands but little attention. Yours truly,  
F. BURBIDGE,  
Supt. Chicora Fertilizer Co.

Pulverizer produces from 20 to 200 mesh fineness. Granulator from size of wheat berry to 20 mesh. Both mills fed in size 3/4-in. cube and under. Deliver finished and uniform product through screen into hopper below. Only wearing parts are rolls and ring, which are made of best chilled carbonized iron, dense and fibrous, hence durable.

AMERICAN ORE MACHINERY CO.,  
No. 1 Broadway, New York, N. Y., U. S. A.

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GEO. S. COMSTOCK, Successor to HAUCK & COMSTOCK  
MECHANICSBURG, PA.

McLANAHAN & STONE, ENGINEERS & MANUFACTURERS,  
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Phosphate Washers,

IMPROVED ORE WASHERS.

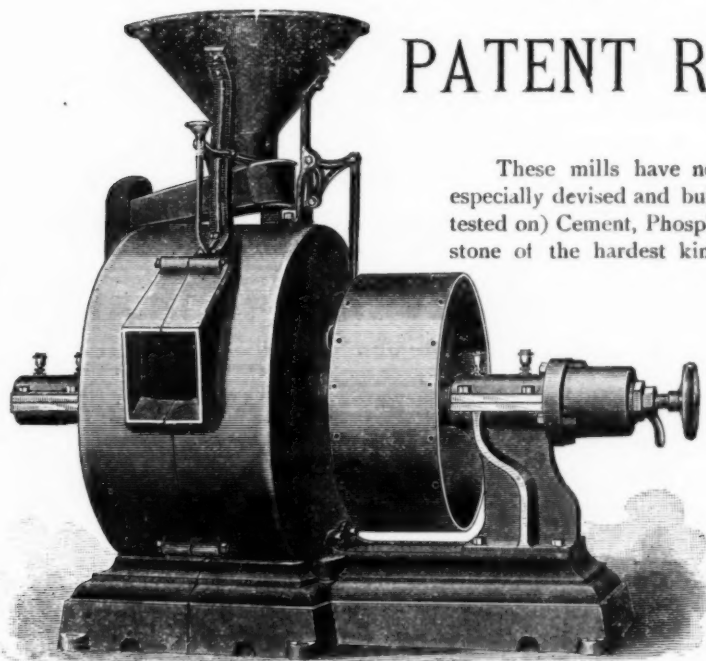
With Revolving Screens and Picking Table,  
ORE ELEVATORS, CONVEYORS, Etc., Etc.  
Complete Plants for Washing Hematite Ores at Least Costs.



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Sole Manufacturers of VERTICAL MILLS using the STURTEVANT

## PATENT ROCK EMERY MILL STONES.

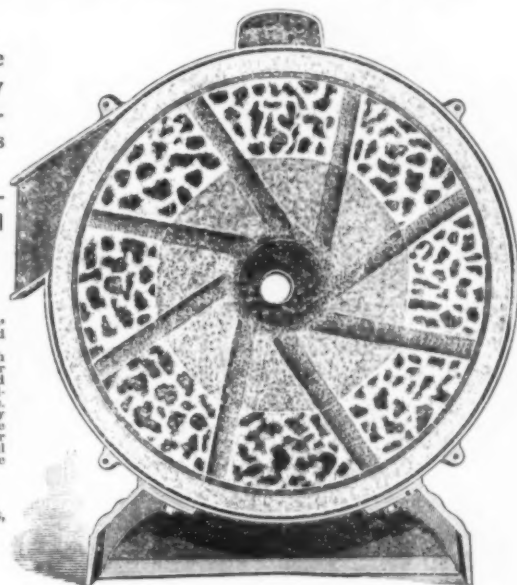


These mills have no equal for grinding. They are especially devised and built for (and have been thoroughly tested on) Cement, Phosphate Rock, Carbon, Flint, Limestone of the hardest kind, Nitrate of Soda and various kinds of Paint Rock.

We guarantee better results than can be obtained by any other mill.

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GENTLEMAN—The Mill for grinding Iron Oxide sent us by you on trial, is very satisfactory and we will keep it.  
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Yours very truly,  
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F. J. JEWETT, Asst. Supt.



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MANUFACTURERS OF THE WALDRON & SPROUT MILLS AND THE RING MILL MACHINERY.

### THE NEW GRIFFIN MILL

Will Work Either Wet or Dry.

CAPACITY, from two to four tons per hour, to 60 mesh or finer.

First-Class Mechanical Construction  
IN EVERY DETAIL.

Descriptive circulars and full information  
furnished on application to

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Manufacturers and Gen. Agents.

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### The PERFECT PULVERIZER.

THOROUGHLY TESTED and proved to be the most successful machine ever made for PULVERIZING all refractory substances, such as QUARTZ ORES of all kinds, PHOSPHATE ROCK, CARBON, FOUNDRY FACINGS, PLUMBAGO, PORTLAND AND ROCK CEMENTS, Etc.

Complete Within Itself.

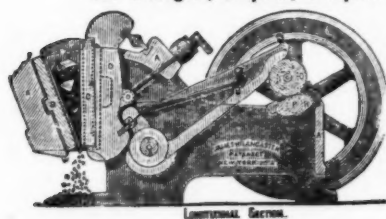
DELIVERS A FINISHED PRODUCT.

No Auxiliary Apparatus Required.

Automatic Feeder  
WITH EACH MILL.

### The "LANCASTER" Rock Crushers and Grapples.

The Strongest, Simplest, Cheapest and the Most Powerful of all Breakers and Diggers.



Instantly adjustable to yield any desired uniform grades of product. Has the power only required and is less liable to breakage and less in first cost, and also in subsequent wear and tear, and less weight than any rival's breaker. For crushing rock for macadamizing and concreting purposes, and also for reducing ores, these breakers are specially efficient. The "Lancaster" Crushers are also made in "Sections" for easy transportation in mountainous regions. May be mounted on wheels, worked by hand, horse gear and steam or other power, and also fitted with Rotary Screens, Elevators and Conveyors. Correspondence and trial tests also solicited of the "Lancaster" Automatic Grapples, Engines, and hand, horse and steam power Hoisters.  
Send for our "1892" Illustrated Catalogue, Price List and Testimonials. Particulars of the "Lancaster" Direct Steel Process sent on application.

JAMES H. LANCASTER, Patentee and Manufacturer, 141 Broadway, New York.



Digs, raises and discharges Mud, Clay, Coal, Ore, etc., by hand horse or steam power.

P. O. Box 3139.



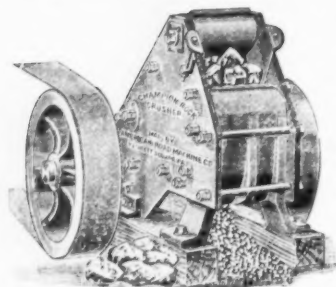
### THE BROUGHTON DRY MIXER

For Hard Plaster, Paints, &c.  
W. D. DUNNING,  
Syracuse, N. Y.

FOR THE BEST DISINTEGRATING MILL TO GRIND BONES, TANKAGE, CLAY, ORES, COAL, PLASTER, PLASTER ROCK, FISH SCRAP, SALT CAKE, GRAPHITES, &c., FERTILIZING MACHINERY, BREAKERS, SCREENS, MIXERS AND DRYERS, correspond with

STEDMAN'S FOUNDRY & MACH. WORKS  
AURORA, IND.

## The Champion Steel Rock Crusher.



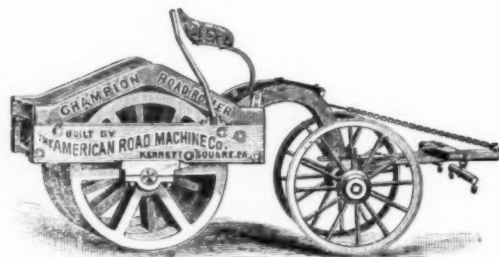
No more break downs.  
Built to stand the racket.  
Will do the work of hundreds of  
men with stone hammers.  
Reduces the expense of rock  
crushing so that every public  
highway can be surfaced with  
macadam.

WRITE FOR CIRCULARS, ADDRESS

THE SOUTHERN EQUIPMENT COMPANY,  
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## The Celebrated Champion Road Roller.

No stiff tongue.  
The front truck saves  
the horses' necks.  
Turns as easy as a  
wagon, and without  
disturbing the  
surface of  
the macadam.



AMERICAN ROAD MACHINE COMPANY,  
KENNETT SQUARE, PA.

## UNION FOUNDRY & MACHINE WORKS,

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MANUFACTURERS OF

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Crushing Rolls, ROLLERS for Macadam Roads.

A Special Crusher mounted on wheels for TOWNSHIP  
ROADWORKING, which makes it easily and readily  
taken from place to place as needed.

SCREENS, Etc.

WE MAKE A SPECIALTY OF

CHILLED AND SAND ROLLS

AND ALL KINDS OF

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## Cummer's Drying, Calcining & Pulverizing

MACHINERY, APPARATUS and PROCESSES for

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Rock and Pebbles, also separates same from clay and other impuri-  
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Also, dries clay for Brick Making, Pottery, etc. as it comes  
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Rock and Pebbles, at any temperature from 500° F. and higher,  
very cheaply and rapidly. Also, Gypsum, Rock, etc. Labor  
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All Dry Ground Minerals,  
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Ground Phosphate Rock to 80 mesh absolute, and finer. Also, separates ground  
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Of Phosphate Rock. For this and for Dry Paint Grinding we make  
decidedly the best machine. Has large capacity, is durable  
No journals in machine or exposed to grit. Is a reliable,  
every-day machine.

"Dry Process"

### PORTLAND CEMENT

Works.

We will furnish plans for "Dry Process" Portland Cement Works,  
and all necessary machinery and apparatus for making  
same, to actual "bona fide" customers.

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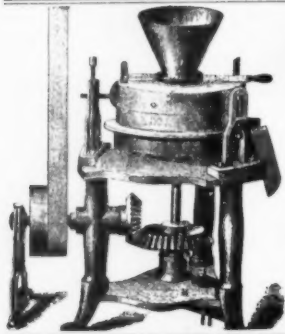
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Of materials to be dried, calcined, separated or pulverized. Send quart  
samples of moist materials in sealed cans. If materials are  
to be pulverized or separated send small samples of crude  
and finished product. Express prepaid.

Manufactured for U. S. exclusively by

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## NEW PATENT IMPROVED PAINT AND COLOR MILLS

WE ALSO MANUFACTURE

Paint Mixers, Putty Mixers, Putty  
Chasers, Pony Mixers, and every  
variety of Paint and other  
Machinery.

CONTRACTS TAKEN FOR NEW WORKS, ENTIRE OR IN PART.

THOMPSON & CAMPBELL,  
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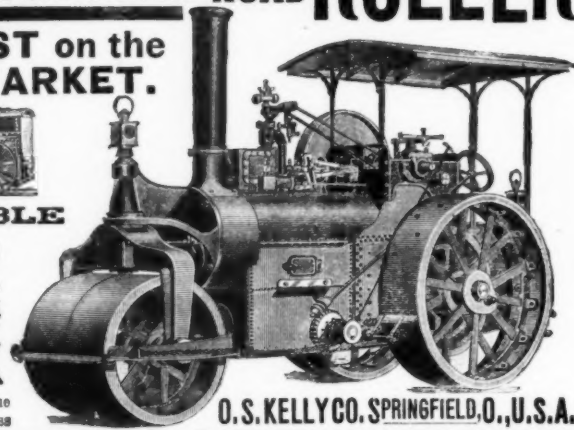
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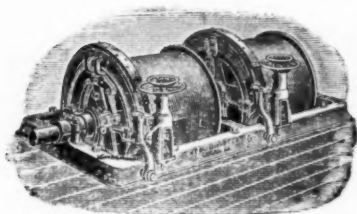
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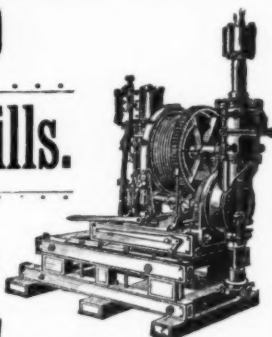
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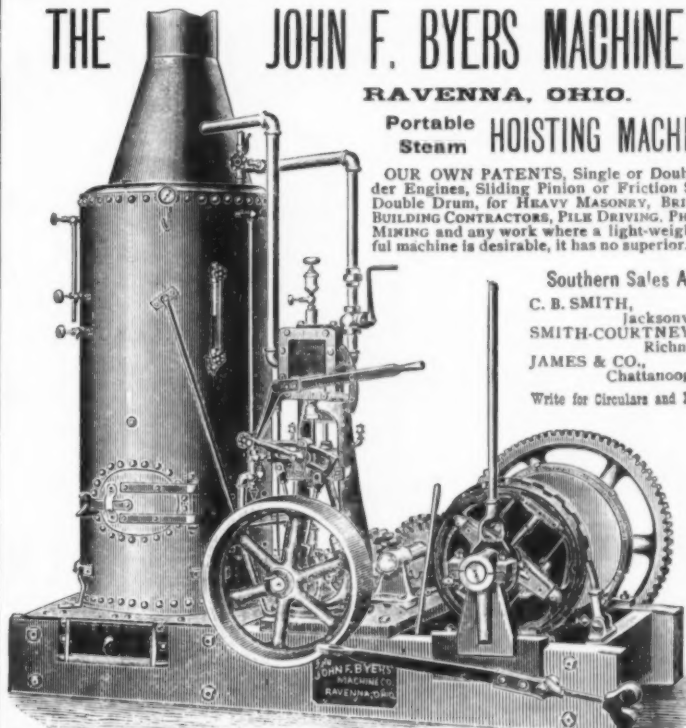
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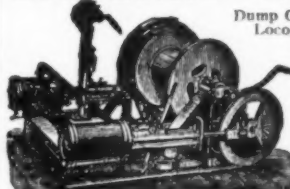
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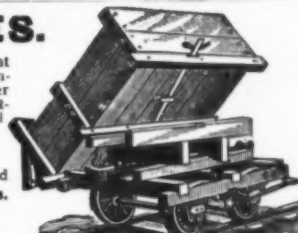


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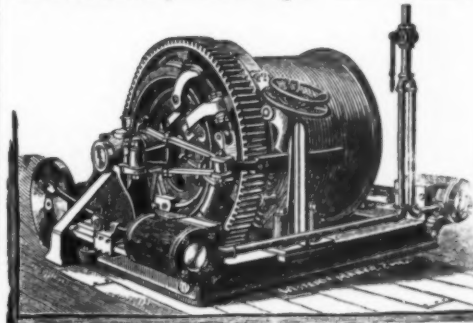
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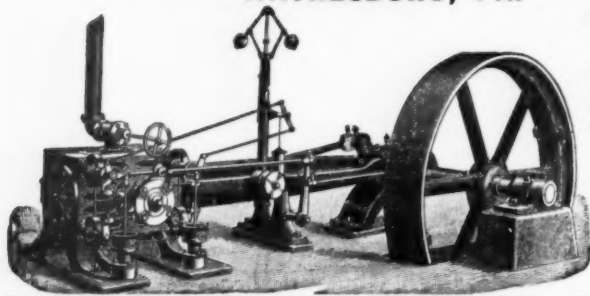
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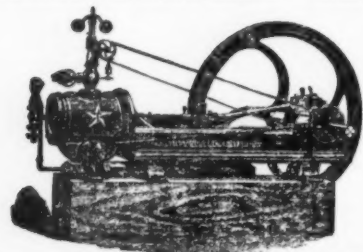
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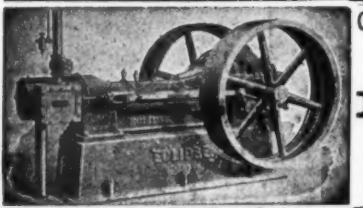


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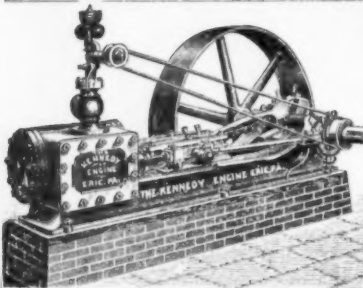
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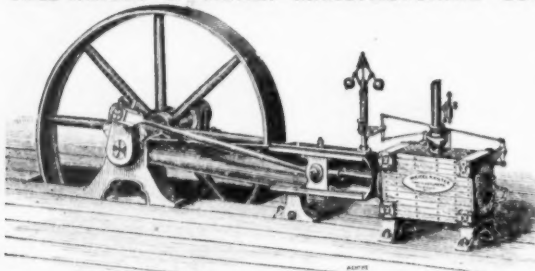
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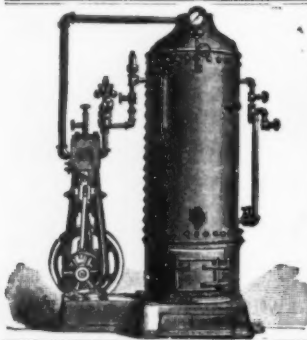


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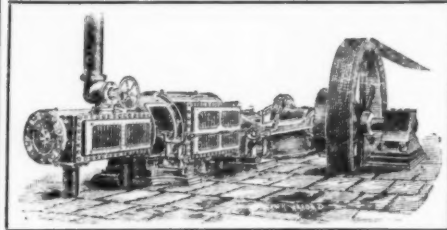
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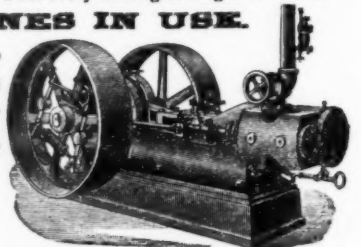
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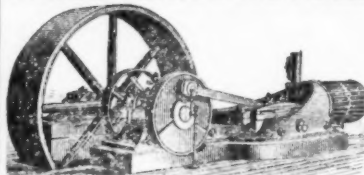
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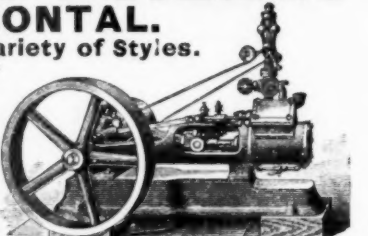
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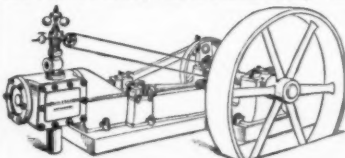


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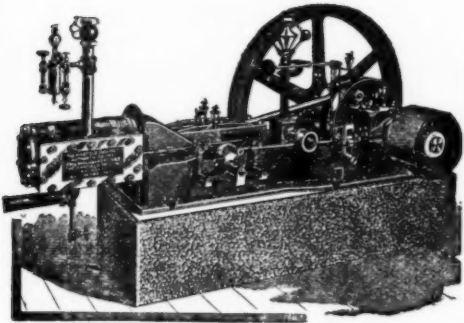
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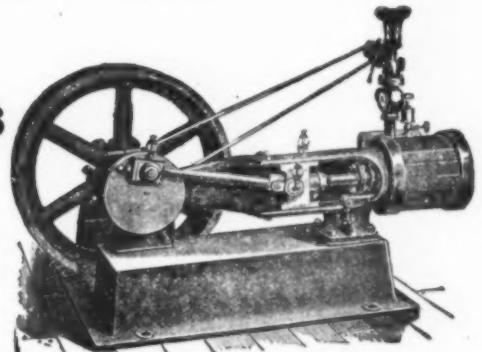
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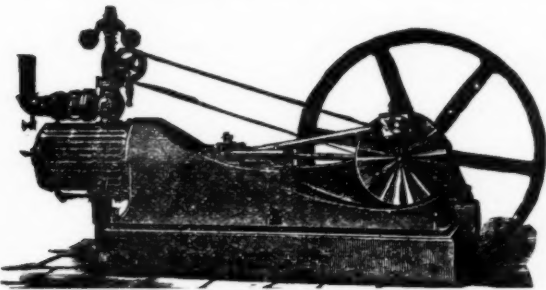
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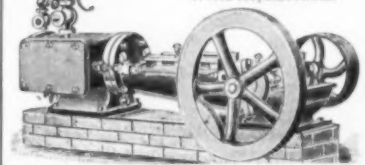
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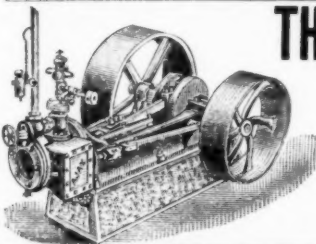
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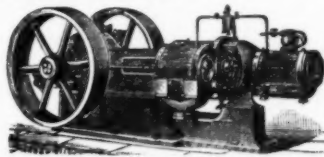
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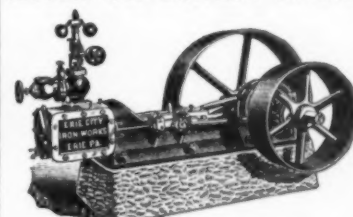


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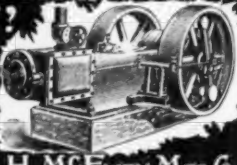
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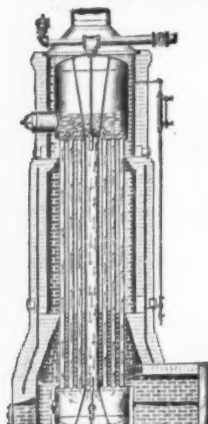
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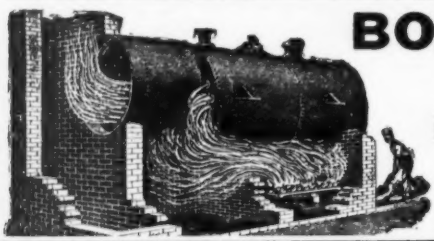
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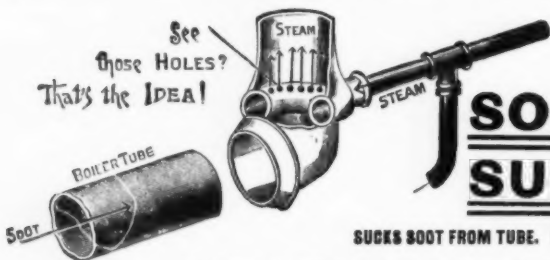
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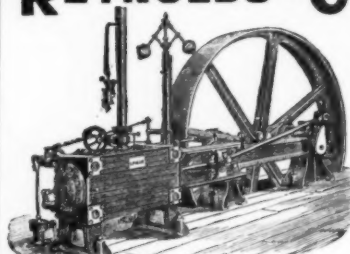
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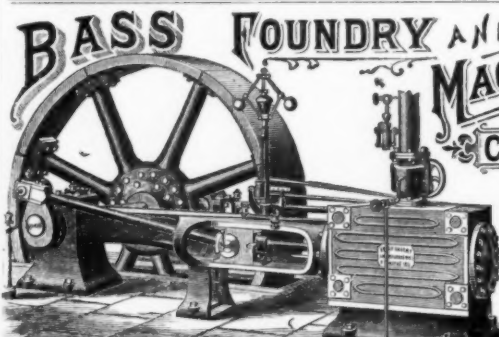
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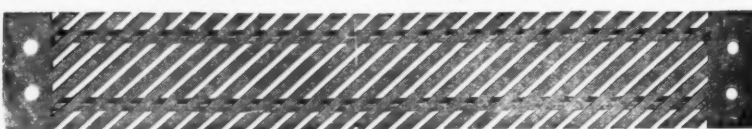
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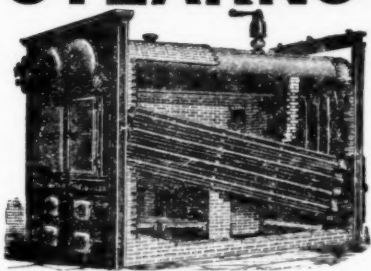
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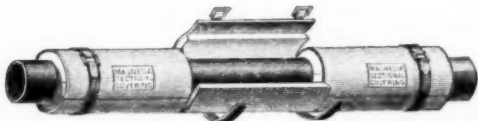
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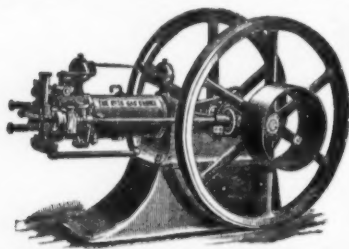
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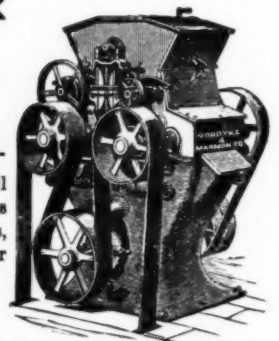
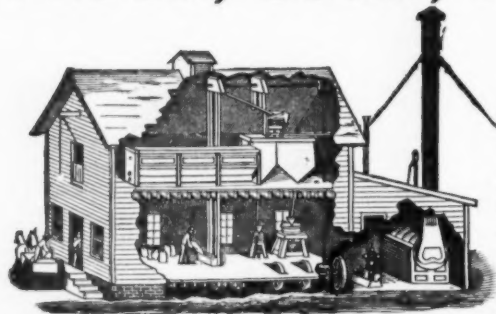
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# MANUFACTURERS' RECORD.

[Name Patented 1889.]

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XXII. No. 16.  
WEEKLY.

BALTIMORE, NOVEMBER 18, 1892.

\$4.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

## The Texas World's Fair Building.

The Texas State building will be one of handsomest State buildings, situated on the right of the entrance. It will contain an assembly room fifty-six feet square, twenty-eight feet high, provided with large art glass skylight in the ceiling with a mosaic Texas star in centre. The rostrum, ante-rooms, etc., will be finished in the natural woods of Texas.

The administration wing will contain rooms for a bureau of information, register, messenger, telephone, telegraph, secretary, president, directors, Texas Press Association headquarters, lady secretary, president and executive committee, lobby, historical museum and library; also toilet-rooms, county collective exhibits, etc.

The main entrances are through vestibules, flanked on either side by niches and colonnades. The main vestibules terminate in a large auditorium, from which entrance is afforded to the various working departments above mentioned.

In the treatment of the design the architect has not deflected from the history of the Lone Star State, which from the initial has been marked by a Spanish tinge whose architectural feeling and beautiful botanical effects lay down a chain of thought far too beautiful to forsake for that of this modern day. Therefore, the architect has designed the building, colonnades, grounds, fountains, foliage, etc., to present a Spanish vista, a bower of beautiful Texas foliage, comprising the banana, palm, magnolia, pomegranate, Spanish dagger, orange and many rare tropical plants common to Texas.

The building was designed by J. Reily Gordon, of San Antonio, and will cost \$40,000, the contract having been awarded to Messrs. W. Harley & Son, of Chicago, Ill. This is the only building built entirely by the ladies of any State.

## WORLD'S FAIR NOTES.

### What Is Being Done Towards Representing the South at Chicago.

#### MARYLAND.

The Maryland Steel Co. at Sparrow's Point has contracted to transship to Chicago the two monster guns which the famous Krupp manufactory in Germany intend exhibiting at the World's Fair. The guns weigh 164 and 65 tons, respectively. The company will also transship a number of gun carriages and armor plates which will arrive at the same time as the ordnance pieces. It is not yet known on what vessel the Krupp products are to be shipped, but they are expected to arrive at Sparrow's Point some time in January. The Pennsylvania Railroad Co. is now engaged in the manufacture of special cars for the purpose of transporting the big guns from the Point to Chicago.

The Maryland Steel Co. proposes to have a fitting exhibit at the World's Fair, representing the varied interests at the Point, and showing in detail the workings of this immense plant, but as yet there has been nothing definite decided upon as to the character of the exhibition or the amount of space that will be occupied.

The plans for writing the handbook of

Maryland, its history, present condition and resources, for the World's Fair have been formulated by a committee of the faculty of the Johns Hopkins University, in whose hands it was placed, and work upon it will be begun at once. The book will consist of some 500 pages, and will be suitably and attractively bound, illustrated and provided with maps. It will contain a sketch of the history of the State, description of the natural and political advantages of Maryland, its position, boundaries, etc. A portion will also be devoted to the physical geography and geology of the State, which will be prepared by Prof. George H. Williams. The flora, fauna and fisheries will be treated of, a special chapter being devoted to the oyster and its cultivation. Attention will be paid to Maryland's trade, commerce, manufactures and industries, its political, educational and religious institutions, charitable and penal institutions, together with social statistics relating to its wealth, number of inhabitants, etc. Professors W. H. Browne, H. B. Adams, William K. Brooks, George H. Williams and Dr. William B. Clark, all

been appointed commissioner in charge of Louisiana's exhibit, will soon go to work to get the State exhibit together, and will endeavor to raise \$35,000 in addition to what has already been appropriated. Steps have been taken towards securing an exhibition of Louisiana's fruits, and an effort will be made to get up an exhibit of the State's mineral resources.

#### TEXAS.

The Women's World's Fair Association of Texas has raised \$17,000 of the \$25,000 necessary to put up the State building. Mrs. Tobin, president of the association, on a recent trip to Chicago obtained a concession enabling the Texas County Exhibitors' Association to put up an annex to the building, where they can display their exhibits and distribute printed matter descriptive of the resources of Texas. The exhibits already prepared by this association are very fine, and an effort will be made to induce every county in the State to prepare an exhibit and join the association. The secretary of the Texas Lumbermen's Association has turned over

plenty of light. The exhibit stalls are arranged in compact and consecutive order, all accessible by a long rectangular corridor. The rooms representing dungeons in the original building will be fitted up for office and reception purposes.

#### VIRGINIA.

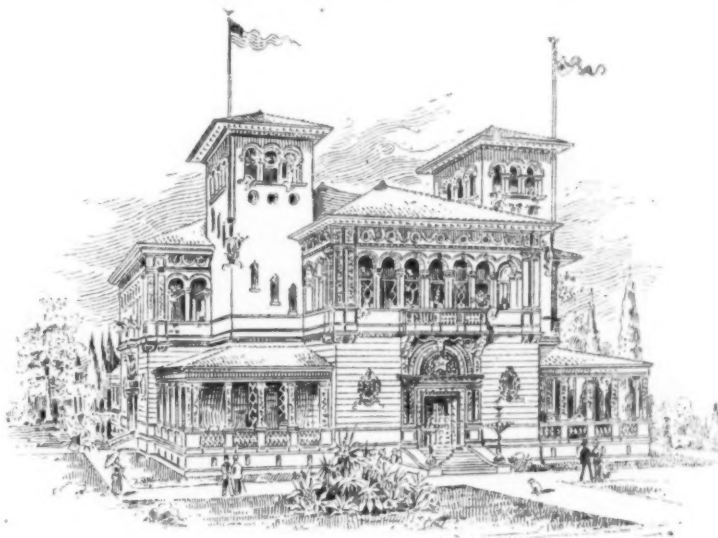
The contract for the Virginia building has been awarded to Messrs. Holtzclaw Bros., of Hampton, Va., and Washington, D. C. The cost will be \$14,450, and the building will be ready about March 1, 1893. Furniture of ancient pattern will suitably fill the house, and the appearance of everything therein will be just as at the death of Washington.

### What Experts Have Learned About Ramie Culture.

Charles Richards Dodge, the special agent of the Department of Agriculture who has had charge of the fibre investigations for the department, writes to *Find-Street's* as follows about the prospects of ramie culture in the United States:

"I have said that 'the future of the ramie industry in America depends upon a careful consideration and understanding of the whole situation studied connectedly—culture, stripping of the fibre and the preparation of the fibre for manufacture.' The industry has not been studied connectedly by its promoters in this country, and there seems to be a very limited understanding of the relation of one branch of the industry to another or of the importance of securing that expert knowledge of the whole subject so essential to the accomplishment of thoroughly practical results from the commercial standpoint. More than this, the common facts regarding this wonderful fibre plant seem to be so little understood that it is rare indeed to see a newspaper article on the subject that does not teem with errors and misstatements, though the writers have doubtless been honest in their endeavors.

"The establishment of large manufacturing plants implies a sure supply of raw material to keep them running, yet only a year or so ago, while the promoters of several manufacturing concerns I might name were talking of putting ramie goods on the market in a few months and in quantity, the Department of Agriculture ascertained through the consular service that the world's supply (at that time) was but 10,000 tons, the larger part of which was absorbed in Eastern countries. Two years ago one of the largest firms of fibre brokers in Europe, Messrs. Ide & Christie, London, reported the situation to me as follows: 'Three or four hundred tons during the last five years would represent the maximum quantity brought from China, while other producing countries have sent little more than sample lots and trial parcels.' The world's supply has improved somewhat, but it is still inadequate for any large demand, and this leads us to the matter of home cultivation. If the fibre is grown in this country it must be cleaned in this country, and the machine product is so variable in quality (with the fact before us that the machine question has not been satisfactorily settled) that, with China grass at seven cents a pound, some of the machine fibre would be dear at three cents. And some of the fibre I have seen would



THE TEXAS WORLD'S FAIR BUILDING.

of the Johns Hopkins University, will be engaged in preparing the work.

#### LOUISIANA.

The governor has set apart \$4,000 for the preparation of an exhibit of Southern fish to be included as a part of Louisiana's exhibit. The exhibit will be known as fish, fisheries and fish culture, and will embrace fish of every variety found in Louisiana waters, both salt water and fresh, even the crab and shrimp. A fine specimen of every class will be gotten together and stuffed. Those in charge as fish commissioners are Geo. H. Dunbar, H. F. Howard, R. S. Day, John R. Fell and Charles Ballejo. Arrangements are being perfected for an exhibit of moss at the exposition. A moss merchant of New Orleans proposes to show moss as it hangs in waving garlands from trees through the entire process of preparing it for the market. The committee on literature have determined to prepare a book of poems and other writings relating to Louisiana to be sold as a souvenir at the Louisiana building. Mr. John C. Wickliffe, who has lately

to Mrs. Tobin their subscription to the World's Fair fund, amounting to \$3,600.

#### ARKANSAS.

Arkansas will dispute through its exhibits at Chicago the claim of California for being the home of the biggest trees of the country. A specimen from this State is now being put in shape for transportation to Chicago which measures thirty-three feet in circumference one foot above the ground; four feet from the ground it measures over twenty-one feet in circumference and seven feet in diameter. This tree is 125 feet in height, and it is sixty feet from ground to first limb.

#### FLORIDA.

During the recent dedicatory exercises in Chicago the reproduction of old Fort Marion, Florida's State building, was a striking object of interest by reason of its curious design and appearance, and attracted the lion's share of attention among State buildings. It is admirably adapted for display purposes, the open court in the interior giving a good opportunity for

entail such waste in its preparation for spinning that no manufacturer could afford to purchase it at any price. The nearer the machine fibre approaches the China grass of commerce in product the more economically can that fibre be prepared, but the most perfect machine in the world cannot produce a good spinnable fibre from poorly-grown or unevenly-grown stalks (uneven in quality), though the manufacturer may not know just how inferior it is until he begins to manipulate it. A dry spell following a very wet spell of weather will produce considerable difference in quality of fibre in the same stalk of ramie on account of slow, stunted growth following rapid, free growth. In working the fibre from such stalks the chemical treatment, for example, necessary to properly treat the stunted portion would in some cases wholly disintegrate and render worthless for line spinning the softer portion, and waste and loss must ensue, yet this defect would not appear in the ribbons of raw fibre as they came from the machine.

"How many of those who are interested in promoting ramie companies, and who talk of using home-grown ramie, know anything about the growth of the plant, cost of production in its several stages, or of the comparative value of the raw fibre by different methods of decortication, or in the further processes of degumming? Do the machine inventors themselves know precisely what their product is worth in the market when decorticated? The results of recent French experiments show a difference of \$65 between the cost of a ton of degummed fibre from thoroughly cleaned machine ribbons and a ton of the same from simply designated ribbons with the gums and bark intact.

"Two different machines running side by side may turn out the same amount of fibre in a day, and yet the fibre from one may be twice as valuable as the fibre from the other. The money value of the product must also be affected by the quality of the stalks it works upon; and when an inventor makes a test of his machine on small, immature growth, as I have witnessed on more than one occasion, he not only misleads the public in any statements he may make, but cheats himself.

"Even the cultivators in the United States have only experimented in a small way and in the simplest manner, and it would be almost an impossibility to-day to come anywhere near to the correct figure in an estimate of the actual cost of growing ten tons of stalks that would produce first-class fibre. In a newspaper article before me relating to a new ramie-manufacturing concern, the value of a crop of ramie to the farmer in the South is stated at \$150. Let us see what this means. The French experimenters tell us that two crops a season, under the most favorable circumstances, will yield only a total of twenty-five tons of stalks with leaves; that a ton of such stalks will produce about twenty-five pounds of chemically degummed fibre, fit for spinning; that this twenty-five pounds of degummed fibre, after paying for the raw cleaned fibre and the expense of degumming, has cost less than \$3. The product of twenty-five tons, at this rate, would amount to \$75, not for raw fibre, but for spinnable ramie. How the farmer is to secure twice this sum for the simple cultivation of the stalk does not appear. At best he cannot receive more than the market price of Chinese raw ramie, which can be purchased at seven cents per pound, and he must separate the fibre into the bargain.

"The only concern in the world that has come anywhere near making a full success of this industry, a French company, has done so by careful practical experiments in cultivation on a large scale, in connection with a very costly experience with the decorticator problem, followed by practical experiments in degumming the fibre on a

commercial scale, manufacturing the product finally in its own factory, which runs over 5,000 spindles. This concern has been successful because it long ago foresaw that success depended upon a careful consideration and understanding of the whole situation studied connectedly—culture, stripping of the fibre and the preparation of the fibre for manufacture. But its success has cost years of time and several fortunes in money.

"The statement is so very 'plausible' that I have little faith in the establishment of the ramie industry in America until some such thoroughly systematic and connected study has been entered upon by its active promoters on this side of the water, with a better understanding of its requirements and conditions than at present appears.

"The possibilities of the industry are enormous, dependent upon the fullest appreciation of its many problems, that will enable intelligent action to the end of avoiding those costly mistakes which have foundered so many well-backed and otherwise well-equipped enterprises. The government is aiding in this work as far as it is able by securing all available information upon the subject that will show the world's progress, and its reports are sent free to all who may apply for them. That there has been little recent progress to record in this country is due to the fact that while valuable experimental work has been accomplished, and a few fabrics manufactured, there are no manufactories in active operation. On the other hand, I regret to say, too many of the advertised ramie enterprises have only been on paper, their capital chiefly represented by a bundle of exquisite samples of fabrics manufactured in France."

#### Tobacco Culture in Florida.

At the recent tobacco exposition in Pensacola, Fla., a letter was received from H. J. Fenton, manager of the tobacco department of the Owl Cigar Co. at Quincy, Fla., in which he gave some interesting facts concerning tobacco-growing in Florida, as follows:

"Tobacco-growing in Florida is no new enterprise, for it was successfully pursued here before the war, and many of her citizens became wealthy, and the tobacco-growing sections of Florida ranked among the first agricultural sections in the United States; and when the war broke out the industry entered into a sleep of nearly a quarter of a century; but at last it woke, to be one of the greatest financial agricultural industries in the Southern States. To prove this may be quoted the following extract from a speech by Hon. W. H. Ellis at the Masonic banquet in Quincy, July 24, 1892:

"In the year 1888 the amount of business done by the merchants of Quincy was \$246,702. In 1891 it had increased to \$545,957. In the present year it is estimated the business transactions will reach \$896,820—an increase of over \$650,000 in the four years.

"We never had a bank here until August 29, 1889, when the Quincy State Bank commenced with a paid-up capital of \$60,000. On that day its deposit account was \$2,181 and its loan account \$1,235. The same date 1891 the deposit account was \$48,000 and loan account \$104,000. On June 12, 1892, the deposit account was \$100,000, the loan account \$102,000, with a surplus of \$12,000. There was paid for tobacco alone over the counters of this bank in 1892 \$300,000, and they pay a semi-annual dividend of 3 per cent. These are figures that show prosperity and speak for themselves, as well as the small number of mortgages now on record in our clerk's office as compared with 1888.

"In 1890 there was grown by the Gadsden county farmers (not including the Owl Cigar Co., Schroder & Bond and Carl Voght) 650 acres of tobacco, ranging in acreage

from one to twenty acres in a crop. The average yield was 392 pounds to the acre, and sold for an average price of twenty-five cents per pound. Total number of pounds, 254,800. Amount received by the farmers, \$63,700, or \$98.00 per acre, with a cost not to exceed \$48.00 per acre.

"In 1891 the acreage increased to 2,000 acres, with an average of 430 pounds to the acre, and brought the farmers an average price of thirty-one cents per pound, making a total of \$308,700, or an average of \$133.30 per acre, with a cost not to exceed \$50.00 per acre. This year there is every reason to expect as good prices as in 1891, and as good weights as last year. This being the case, the resources will be \$500,000 this year from tobacco for the farmers of this county alone.

"The question is often asked, why my crop did not bring as good a price as John Smith's? It is sometimes in the soil where the crop is grown, sometimes in the handling. These two are very important factors. First, select the right soil; second, handle well after growing the crop. Tobacco is not like other crops—grow them, then leave the rest to your help and go hunting or fishing. After the crop is housed comes the time when care and attention are needed. A whole crop can be completely ruined by neglect in twenty-four hours. Bear this in mind, for they are facts that cannot be denied, and there are growers everywhere who have experienced this disastrous result.

"There appears to be a timidity on the part of some about growing much tobacco for fear of overstocking the market. Now, if every available foot of land for tobacco had grown a crop this season there would not have been enough to supply the demand for good tobacco. The amount of tobacco grown in Florida cuts no figure in the market. Carefully gathered statistics show that there are 600,000 smokers in New York city every night, and a small average is three cigars to a smoker; that is, 1,800,000 cigars each night, at twenty-five pounds tobacco to the thousand, or 450,000 pounds smoked in New York alone each night.

"Now, let every man that can equip to grow tobacco do so and have enough in the State next year to attract the buyer here, and then look for the long-talked-of boom. We have got the soil, the climate and the labor at our command and can get the money. Now, do not let us lose the golden opportunity for the want of ambition. Push the enterprise now, and Florida will be the banner State in the Union with her tobacco crop.

#### Preparation of Kaolin.

The method used in preparing kaolin and other fine clays before they can be used for manufacturing purposes is not generally known, the idea of most persons being that unless the clay is in itself very pure it is worthless. That this is a mistaken view is shown in many places, and notably at the celebrated deposits in Delaware county, Pa., where the crude clay occurs with sand, from which it must be carefully separated in digging. From the pit the clay is hauled to the mill and placed on the stock pile, from whence it is taken and dumped into the mixing trough, where it is thoroughly broken up and mixed with water. Regarding its Southern treatment, the *Brickmaker* says that this clay and water run into a trough in which a vertical wheel revolves with pocket elevators on its circumference. Here the sand settles to the bottom, and is carried off by the pocket elevators. The water holding the clay in suspension then passes into board sluices known as "clay runs" or "slips." These slips are placed side by side, and the clay in going through them is carried over a distance of between six hundred and nine hundred feet. As the clay and sand carried in suspension pass

through these sluices the latter falls to the bottom and is ultimately removed.

The final discharge is into large settling vats, where the pure clay in the course of a day or two settles; the clear water is then drawn off. From these vats the clay is pumped under pressure of about 160 pounds into canvas bags and placed in hydraulic presses, where the excess of water is removed. The clay, after removal from the press, is placed on shelves in the open air to dry. In this state it is sold to the manufacturers of fine chinaware and porcelain.

The final methods of preparing clays and other ingredients requisite in the production of porcelain differ in each country and in different works. Nationalities have methods peculiarly their own, and each manufacturer endeavors to retain as his own the secrets of his particular compositions and methods of combination.

The following can be assumed to be the general method followed throughout the various countries:

Clays brought from the beds are allowed to "slack" in the air and disintegrate, different clays requiring more or less time, according to the nature of their constituents and the season of the year; after the aging has occurred the clays are washed. The clays are "dissolved" in water, that is, pure clays, being of light gravity, suspend readily, while "undissolved" clays, sands and coarser particles sink in the water.

The impure clays are placed in circular tanks or vats four by six feet in diameter, in the centre of which is a revolving perpendicular shaft with arms radiating and so arranged as to thoroughly cut up and incorporate the clay and water. When the mixture is equally and thoroughly combined and has attained the thickness of cream, the floating clay is drawn from the mixing vat into the sifting apparatus, which are inclined screens agitated by cams, the first two of the series being of a coarse and fine wire, the other of silk bolting cloth, arranged so that the clay which passes through the wires is carried to the higher end of the silk cloth.

The clay which has passed through the silk bolting cloth runs into the bottom of a second circular vat which has revolving arms that rotate slowly; the overflow from this tank is run through long "launders" or sluices to the settling tanks; the clay, after passing through the silk screens, still contains a small percentage of minute sands and micas, which separate by their own gravity in the "launders."

From the "launders" the purified clay is run into circular vats, allowed to settle, the clear water run off (if necessary, it is here treated with acid, then washed to remove acids and salts by agitation in water, settling, and decantation); the clay is then made up with water to a known consistency; that is, each gallon of water should hold a certain weight of solids in an agitated solution.

The treatment of silica is as follows: To render the material more easy of pulverization it is heated red hot and thrown into water; this causes the mineral to decrepitate. It is then ground and washed much in the same manner as the clays, being run into vats and made up into a known consistency. The feldspars and limestones are also ground until they are reduced to such an extreme state of subdivision that the particles remain suspended in the water. The different materials having been brought to known consistencies, the combination of ingredients is made by allowing the required quantity of each fluid to flow into a common tank, where it is thoroughly agitated and pumped to a higher vat, from which it is carried to the drying floors, pans or presses. After the excess of water is expelled and it has attained the consistency of putty, it is beaten and made into balls and stored away in



rooms to ripen, which takes more or less time, according to the nature of the clays.

Where clays have been thoroughly washed at the banks, or when the coarser kinds of chinaware are to be produced, the process of conveying the raw materials through "launders" is sometimes omitted.

#### Electric Power for Cotton Mills.

[Abstract of a paper read before the New England Cotton Manufacturers' Association, October 26, by C. J. H. Woodbury.]

Electric motors are now used for hundreds of purposes, and among them the very important one of furnishing power for cotton and other textile mills. As a rule it is advisable to use a high-pressure current for power on account of the saving in copper conductors, but motors are made which run on low-tension current, such as are used on incandescent lamp circuits, so where a mill is lighted by electricity a motor can readily be placed on the circuit at any convenient point. One thing should be observed—if the current required for the motor is more than one-fifth of that required for the lamps, the latter will vary in brilliancy as the load is on or off the motor.

Before deciding to install an electric-power plant for a service outside of what is already fixed by precedent, expense, delays and disappointments may be avoided by deciding how much you are willing to experiment; and, secondly, how much the party doing the work must experiment before the whole installation is in a practical operating condition.

The fact should not be lost sight of that electricity is merely a substitute for other methods of transmission of power. It has its losses at every step in the course, comparable with those of the wear and tear and friction of shafting and belting. Like them, it also costs money, requires attendance and wears out. It does not in any detail give something for nothing, but the results in comparison with other mechanical means of the transmission of power are merely the addition of a lot of differences. Sometimes these differences are on one side of the account and sometimes on the other. An installation of motors in one instance may be extremely economical and in another highly expensive in comparison to ordinary methods of transmission of power.

Electric motors, like water-wheels or steam engines, have their highest efficiency at a point near to their full proper load, and on either side their efficiency in the percentage of electricity converted into work is diminished. The practical operation of some motors has been improved by the use of fly-wheels. In its application for mill service the most simple uses are those requiring a variable speed and direction, largely on account of causes outside of the electrical conditions in the construction of such motors. It is especially advantageous for elevators in storehouses or other buildings not requiring power elsewhere. The first motor used for operating an elevator in a cotton-mill storehouse was placed in that service in 1882, and is in as good working condition to-day. Another use having a larger field is in its application for railways in mill-yards and buildings. The Salmon Falls Manufacturing Co. has 2,100 feet of track in the mill-yard, and is operating a trolley system of cars to move all their cotton, supplies, cloth and coal with two men, thereby dispensing with the services of a team and three men all of the time and a fourth man a part of the time. The car makes an average speed of 600 feet per minute, and is always ready for service whenever the water-wheel is running. Other mills use electric railroads from the cloth-room to the storehouse with even greater reduction in cost of moving the load. Motors have been successfully applied to calico printing machines, the absence of heat, small space occupied and perfect control of the machine being advantages of the highest practical value.

This class of service for the distribution of power throughout a mill as a substitute for belt or rope transmission has not been tried in cotton mills, but there are many cases where it has been tried in machine shops and yielded excellent results. The amount of power required in cotton mills is so much greater than in machine shops that the subdivision should be to a smaller unit than the whole room in a large mill. I am convinced that such a distribution of power is mechanically feasible, but will it pay to do so when motors and generators each cost nearly or quite \$40 per horse-power, or, including wire and foundations, over \$100 for every horse-power transmitted?

Electricity is advantageously applied by establishing a central station in the mill-yard and from there distributing the current to the various buildings. At a number of places this is being done with most satisfactory results. The use of a good water-power, whether near or at a distance, furnishes the cheapest means of generating the current, and, as the problem of economical long-distance transmission is now being solved—indeed, has been by the experiments at Frankfort, Germany—mills and other users of the current are taking advantage of convenient sources of power of this kind.

The electric lighting and power used in Hartford, Conn., is derived in part from a water-power at Tariffville, ten miles away, and some 300 horse-power is transmitted along the wire that distance and thence distributed to customers around the city.

The Nonotuck Silk Co. is supplying to its mills at Leeds and Haydenville power transmitted by electricity from a dam in a rocky gorge in the river about a third of a mile from one mill and a mile and three-quarters from the other. The installation is not cited as being on a large scale, but because it contains many ingenious features in the manner in which the motors are applied as an auxiliary and a regulator to the water-wheels. The fall of thirty feet is situated between steep banks where it would not be developed under ordinary conditions, because the spot is unsuitable for the location of a mill. There are two water-wheels in use, one of ninety horse-power driving dynamos which furnish 950 incandescent lamps on an alternating system at the mills. The other, 130 horse-power water-wheel drives one Thomson-Houston generator of eighty-five horse-power and another of thirty horse-power, the pressure of the current being the same as that used on trolley street cars. At the mills one-third of a mile distant is one motor of forty-five horse-power, two of twenty horse-power and one of ten horse-power, all supplied by electricity from the eighty-five horse-power generator.

There are several places in New England where the power of waterfalls is being applied through electrical apparatus to machinery at a distance, and there are numerous extensive enterprises of this nature under construction. The electric transmission of power under any practicable conditions of constant or variable speed at a loss not exceeding 20 per cent. has been shown to be entirely practicable, and the open question in regard to all of these devices, whatever may be their purpose, is but the question of cost.

#### Trade of Savannah.

At the twenty-fifth annual meeting of the Savannah (Ga.) Cotton Exchange, President J. F. Minis submitted his report, reviewing the trade interests of the city during the past year. Discussing cotton statistics, he states that the receipts at Savannah for the past season were 1,026,623 bales, against 1,139,560 bales during the preceding year, a decrease of 112,937 bales. This decrease he considers due to discrimination on the part of the Richmond Terminal System in diverting business from

the port and carrying to other points. Referring to the city's general trade, he says that, notwithstanding the financial trouble following the Baring failure, there has been no failures of moment in the city, business now is good and during the past year over \$750,000 has been expended on new buildings.

The naval stores trade has suffered from overproduction, and consequently low prices. During the year the receipts of rosin were 194,274 barrels in excess of last season, and 53,790 casks of turpentine more than last year, so the port still holds its own as the leading port in the world for these stores. In reference to the lumber trade he states that 14,323,281 feet more has been received than last season. Regarding the rice trade he states that it has been much depressed owing to the immense production in Louisiana. In concluding his report he says: "We have to be thankful for the general healthfulness of the community, freedom from storms and other contingencies which might retard the prosperity of our port. With the promised increase of railroad facilities and deeper water we think the future of the city most promising, with every prospect of it retaining its position as the second and most influential port of the South."

#### Atlanta's Fine Present Condition.

By Geo. W. Adair.

Atlanta's citizens now enjoy the reputation of the best distributing point in the South. Her wholesale merchants of every class are large, wealthy and prosperous.

Her variety of manufacturing is unequalled by any Southern city. She leads in no one article, but has a great versatility, and confines her manufacturing to the wants of the people for domestic use, and almost anything can be now obtained in the city out of wood, leather, iron, steel or cotton.

Her churches are large and well supplied with able divines. Her public schools are a model for any city in the Union, and to-day she is teaching 10,000 children of all classes and color. Her bar is rich in legal lore. Her colleges and schools are of the very best quality. Her medical schools rank high. Her art schools are superior. Her social clubs and societies are of a high order. Her architects are up to the latest touches of modern improvements.

Her streets are well paved. The city is built with all the modern conveniences. Her electric plants and facilities are unsurpassed. Her equipages and fine horses are unequalled by any city in the Union of her population.

Her parks and drives and boulevards are the admiration of all visitors, who are struck with the cozy, tasteful homes, shrubbery and flowers surrounding our cottages and mansions.

Our banking capital is fully ample for all the trade and commerce, and her moneyed institutions are on the most solid basis. Her market for table comforts, fruits and flowers is equal to that of any city in the country. She levies tribute on the Gulf and the Atlantic and their tributaries for fish and oysters, and on the mountains and prairies of the West for game, and on the tropical region of Florida for our fruits, in addition to the generous climate which surrounds the city, where all fruits and vegetables grow in the greatest abundance.

Then we have freedom from epidemics and pure, cold, freestone water. No cause for malaria, but bold springs with fresh water running in every direction from the city, where they receive the pure air from the base of the Blue Ridge, perfumed with the balm of native pine, thus ensuring a climate that has proved a sanitarium against cholera, yellow fever and small-pox. The city has never had a serious

epidemic in her borders, nor quarantined travelers for any cause.

It is easy to see that with all these advantages people seek homes in Atlanta.

#### Front Royal-Riverton.

Among the many points of interest which claim special attention at the present time may be mentioned Front Royal-Riverton, a growing town in Virginia located at the junction of the Norfolk & Western Railroad (Shenandoah Valley line) and the Richmond & Danville Railroad. The townsite is a peculiarly advantageous one as regards the upbuilding of the interests of an important trading point and manufacturing centre. Front Royal-Riverton is surrounded by one of the finest agricultural districts in the world, the Shenandoah valley being widely famed for its productiveness, and is situated on a wide and swiftly-running river, which furnishes abundant water-power and makes drainage perfect. The point is readily accessible, being reached from Washington, D. C., by only a few hours' ride, and is to be brought into direct communication with that city by the construction of a projected direct line to be built by the Norfolk & Western. Its transportation facilities are excellent, even at the present time, giving cheaper rates to New York and other Northern cities than either Lynchburg or Roanoke, and the projectors of railroads, realizing the prospective value of Front Royal-Riverton as the future leading manufacturing metropolis of a vast surrounding section, are directing their roads toward that city. It has bright prospects of early established connections with the roads at Washington city, the Cumberland Valley at Winchester and the Pennsylvania in West Virginia. This last, the Broadway & West Virginia, will penetrate a rich agricultural district and open up rich iron ore deposits and valuable forest growths. When completed it will be another air line from this section to Chicago and the Lakes.

The prosperity of Front Royal rests upon a thoroughly solid foundation. A very extensive mercantile business is transacted and a commanding stand is being taken with regard to the establishment of manufacturing and other industrial enterprises. A number of important plants are now in operation and others are being located or are contemplating location. Competent authorities upon town-building agree that here are to be found all the conditions and factors favorable to the growth and maintenance of a large industrial and residence city. In the vicinity, as has been mentioned, are rich iron ore deposits and a great wealth of valuable timber, affording an abundant and cheap supply of raw material to manufacturers of iron and wood. The development of the interests of this promising place, which bids fair to become in the near future the principal distributing centre of the section, has been taken in hand by a strong body of judicious and enterprising men, who have formed themselves into a development organization incorporated under the title of the Front Royal-Riverton Improvement Co., of Front Royal, Va. This company is doing most noble work in noble fashion, extending valuable aid to all important and desirable enterprises, and all in its power to promote the healthful and substantial growth of the community. Thorough investigation of the advantages claimed is invited by the company, and requests for further information will meet with prompt and courteous response. A good many of the readers of this paper—manufacturers who may be desirous of locating in Southern fields, or capitalists who may be seeking safe and profitable investment for idle funds—might find it greatly to their advantage to enter into communication with the Front Royal-Riverton Improvement Co.—*Front Royal-Riverton Gazette.*

## PHOSPHATES.

## Phosphates in South Carolina.

By Edward Willis.

[From the Eleventh Census: Report on Mineral Industries.]

## II.

The production of phosphate rock in South Carolina for the year 1889 was 541,645 long tons, valued at \$2,892,276, against 448,567 long tons in 1888, valued at \$2,018,552, and 480,558 in 1887, with a value of \$1,836,818. It is thus seen that although the production in 1888 was less by 31,991 tons than in 1887, yet the value of the product increased \$181,734, or sixty-eight cents per ton. This increase in value was the result of less competition from various sources, due in part to natural conditions of mining and the purchasing ability of the consumers, who depend almost entirely upon the season's crops. The average price per ton in 1889 was \$5.34, being an increase of eighty-four cents per ton over 1888.

The total amount expended for wages in the production of phosphate rock, not including office force, during the year 1889 was \$1,149,967, against \$499,047 reported at the tenth census, and the capital invested \$5,866,718, against \$2,071,300 at the previous census. The total number of persons employed, including office force, was 4,966, against 2,485 reported at the tenth census.

The following table gives the annual product of phosphate rock in South Carolina since its mining became an industry, the figures given for the years previous to 1886 being for trade years ended May 31, but after that date for calendar years:

TOTAL WASHED PRODUCT OF LAND AND RIVER PHOSPHATE ROCK IN SOUTH CAROLINA (long tons).

Years ended.	Land.	River.	Total.
May 31, 1867.....	6	.....	6
1868.....	12,362	.....	12,362
1869.....	31,985	.....	31,985
1870.....	63,252	.....	63,252
1871.....	59,833	17,655	77,488
1872.....	36,258	22,502	58,760
1873.....	33,426	45,777	79,203
1874.....	51,624	57,716	109,340
1875.....	54,821	67,969	122,790
1876.....	56,566	112,428	169,000
1877.....	56,431	126,369	182,800
1878.....	112,622	97,700	210,322
1879.....	160,779	98,586	259,365
1880.....	125,601	98,162	223,763
1881.....	142,193	141,541	283,734
1882.....	191,305	146,772	338,077
1883.....	219,202	159,128	378,330
1884.....	280,297	181,482	461,779
1885.....	225,913	169,400	395,313
1886.....	149,400	128,389	277,789
Dec. 31, 1886.....	253,484	177,695	431,179
1887.....	261,658	218,900	480,558
1888.....	296,684	187,878	484,562
1889.....	329,543	212,102	541,645

\*June 1 to December 31.

The following table, giving the number of establishments engaged in the phosphate rock industry of South Carolina for the census years 1880 and 1889, together with the capital invested, number of hands employed, total amount of wages paid and total product and its value, shows the steady and healthy growth of the phosphate industry in the State since the taking of the last census. It will be seen that there is an increase of \$3,795,418 in invested capital, or 183 per cent.; 330,268 tons in production, or 156 per cent., and \$1,768,453 in value, or 157 per cent., while the number of employes (not including boys) has increased 2,437, or 101 per cent., with an increase in amount paid as wages of \$659,920, or 135 per cent.:

PRODUCT OF SOUTH CAROLINA PHOSPHATE ROCK IN THE CENSUS YEARS 1880 AND 1889.

	1880.	1889.
No. of establishments.....	21	25
Tons of phosphate rock mined.....	211,377	541,645
Value.....	\$1,123,823	\$2,892,276
No. of hands employed.....	2,475	4,966
Amount paid in wages.....	\$490,047	\$1,149,967
Capital invested.....	2,071,300	5,866,718

The following table gives the number of persons employed in phosphate rock min-

ing in the State of South Carolina, together with the average wages per day of each class and the average number of days employed:

LABOR EMPLOYED IN PHOSPHATE ROCK MINING IN SOUTH CAROLINA IN 1889.

	Number	Average wages per day	Average No. of days employed.
Foremen.....	166	\$2.23	242
Mechanics.....	128	2.51	218
Laborers.....	4,668	0.97	225
Boys under 16 years.....	90	0.51	161
Total.....	4,932		

## OPERATING EXPENSES.

Wages (including office force at mines).....	\$1,149,967
Paid contractors.....	115,436
Paid for supplies.....	313,589
Paid for other expenditures.....	342,647
Total.....	\$1,921,639

The phosphate trade in South Carolina is greatly stimulated by the favorable location of the beds in respect to the field of greatest consumption, namely, the Southern States, which annually consume about 375,000 tons of commercial fertilizers. This in great measure prevents the foreign article from becoming a serious competitor, and in proportion increases trade throughout the State. Another stimulant to trade is the fact that large quantities of phosphate are shipped to various ports as ballast under cotton. Thus cheap transportation is secured, and in proportion the cost of the fertilizer is lessened to the consumer. The rock is especially adapted for the manufacture of commercial fertilizers, it being remarkably free from gangue rock and other impurities, and is readily ground to the necessary fineness for complete decomposition by sulphuric acid. Kiln-dried rock constitutes more than half of the phosphate now delivered for manufacture in the State of South Carolina.

## ROYALTIES.

In 1870 the legislature of South Carolina imposed a royalty of \$1.00 per ton on all phosphate rock taken from the navigable streams of the State. The royalty thus exacted has proved a most important feeder to the State's treasury, the amount obtained from this source up to and including 1889 exceeding the sum of \$2,000,000.

The following table shows the distribution by years of the sum thus obtained from 1870 to 1889, inclusive:

## ROYALTIES PAID BY PHOSPHATE MINES.

1870.....	\$1,989	1881.....	\$121,555
1871.....	17,655	1882.....	149,772
1872.....	22,502	1883.....	125,793
1873.....	45,777	1884.....	153,795
1874.....	57,716	1885.....	176,735
1875.....	57,969	1886.....	196,090
1876.....	81,912	1887.....	208,772
1877.....	126,569	1888.....	196,904
1878.....	97,700	1889.....	212,102
1879.....	98,586		
1880.....	65,314	Total.....	\$2,199,320

The following table shows the shipments of crude phosphate rock from the cities of Beaufort and Charleston to foreign and domestic ports:

SHIPMENTS OF PHOSPHATE FROM BEAUFORT AND CHARLESTON (long tons).

	Beaufort.		Charleston.	
	Foreign.	Domestic.	Foreign.	Domestic.
1867.....				6
1868.....				11,654
1869.....			3,760	24,511
1870.....	1,980	664	13,652	40,999
1871.....	28,431	5,094	14,093	16,843
1872.....	17,540	3,180	15,628	25,955
1873.....	24,600	4,765	2,435	27,403
1874.....	44,857	10,500	7,688	31,930
1875.....	44,617	7,000	25,929	25,560
1876.....	50,834	9,400	25,431	26,831
1877.....	73,923	6,285	28,844	40,708
1878.....	100,619	8,217	21,123	60,729
1879.....	97,799	8,518	21,767	52,281
1880.....	47,157	13,346	14,218	94,012
1881.....	62,600	65,895	8,568	91,929
1882.....	89,581	57,645	22,905	111,314
1883.....	94,789	36,175	28,251	150,545
1884.....	132,114	34,711	21,495	187,700
1885.....	112,000	32,000	11,490	161,700
1886.....	153,409	14,600	6,800	187,000
1887.....	190,000	15,995	9,700	182,000
1888.....	185,850	29,834	3,800	208,000
1889.....	137,102	60,000	5,900	248,643
Total.....	1,689,862	423,804	313,685	2,009,413

From 1871 to 1889, including both years, the local consumption of crude phosphate rock in the manufacture of fertilizer at Charleston has aggregated 674,147 long

tons, the consumption in 1888 and 1889 being 75,000 tons per annum. At Beaufort from 1884 to 1889, inclusive, the consumption has amounted to 66,900 long tons, the average in 1887 to 1889 being from 12,000 to 15,000 tons per annum.

The question of the supply of phosphate rock from the river and land beds in the future has been discussed at different times by various authorities, who have attempted to estimate the tonnage available for commercial mining, but these estimates vary so widely as to destroy the value of any conclusions based on them. Prof. C. U. Shepard, Jr., put the figure at 5,000,000 tons, Prof. Otto W. Moses at 9,000,000 tons, and Prof. H. Colton's estimate is 576,000,000 tons. The first of these estimates has already been exceeded, the second has not yet been reached, and it is doubtful if the last will ever be.

## Phosphate Shipments from Fernandina

FERNANDINA, FLA., November 14.

Among the leading phosphate ports we claim a very high position, and all the surroundings at present indicate that this port will take first place as a shipping point for the phosphate product. Everything now is very active here, and all the incoming trains bring from twenty-five to thirty carloads of rock. There are a number of steamships and handy-sized vessels now loading and to arrive which will all take full cargoes to domestic and foreign ports. The steamship Preston has been chartered by the Dunnellon Phosphate Co. to take 2,400 tons of phosphate rock, and she is daily expected to arrive. Our shipping facilities are now very good, but further harbor improvements are expected in the near future, yet, with the depth of water at present, which is 19½ feet, our export trade is rapidly increasing. A glance at the table below will give a correct idea of affairs at this port. The shipments of phosphate for 1890 were 10,424 tons, and for 1891 they were 51,300 tons, and the year 1892 shows the following shipments:

SHIPMENTS OF PHOSPHATE FROM FERNANDINA FROM JANUARY 1, 1892, TO OCTOBER 31, 1892.

Date.	Vessel.	Destination.	Tons.
Jan. 2.....	Steamship Samuel Tyack.....	London, England.....	2,160
" 10.....	Schooner Minnie Louise.....	Barbadoes.....	302
" 12.....	Bark Arica.....	London, England.....	662
" 14.....	Steamship Lexington.....	Stettin, Germany.....	1,492
" 29.....	Bark Maratini.....	London, England.....	692
" 7.....	Steamship Sydnam.....	Harburg, Germany.....	1,561
" 23.....	Schooner Edna.....	Barbadoes.....	481
" 25.....	Steamship Sunshine.....	Hull, England.....	1,063
Mar. 1.....	Steamship Covestry.....	Stettin, Germany.....	1,542
" 5.....	Steamship Bernard.....	Berkehead, England.....	1,060
" 11.....	Steamship Storra Lee.....	London, England.....	1,826
" 19.....	Steamship Ruabon.....	Rotterdam, Netherlands.....	2,487
" 22.....	Steamship Craiglands.....	Stettin, Germany.....	1,550
" 25.....	Steamship Kuseville.....	Memel, Germany.....	1,375
" 26.....	Schooner S. B. Marts.....	Baltimore, Md.....	365
" 26.....	Steamship Ermanrich.....	Copenhagen, Denmark.....	1,960
" 31.....	Steamship Hallamshire.....	Ipswich, England.....	1,530
" 31.....	Bark Grolunda.....	Valencia, Spain.....	510
April 13.....	Steamship Resolute.....	Hamburg, Germany.....	1,995
" 16.....	Schooner L. Garrettson.....	Wilmington, Del.....	810
" 25.....	Steamship Glen Isle.....	Duness, Scotland.....	1,933
" 28.....	Steamship Potaro.....	Harburg, Germany.....	2,660
" 30.....	Steamship Kirtle.....	River Oder, Germany.....	1,360
May 4.....	Steamship Norlands.....	Kostrup, Denmark.....	1,627
" 11.....	Steamship Kate Fawcett.....	Stettin, Germany.....	2,257
" 17.....	Steamship Milo.....	Danzig, Germany.....	1,408
" 20.....	Steamship Hessle.....	River Oder, Germany.....	2,248
" 21.....	Steamship Orkla.....	Genoa, Italy.....	2,337
" 21.....	Schooner K. P. Ebeens.....	London, Eng.: Hamburg, Ger.....	2,247
" 27.....	Steamship Storra Lee.....	Baltimore, Md.....	750
" 31.....	Steamship Axminster.....	Harburg, Germany.....	1,061
June 14.....	Steamship Gardeepe.....	Leith, Scotland.....	2,414
" 17.....	Steamship Swedish Prince.....	Havre, France.....	1,995
" 25.....	Steamship Glamystwyth.....	St. Loix de Rhone.....	2,626
" 28.....	Steamship Hallamshire.....	Harburg, Germany.....	1,987
July 11.....	Steamship Scottish Prince.....	Garston, England.....	1,166
" 12.....	Schooner S. B. Marts.....	Harburg, Germany.....	1,334
" 20.....	Steamship Geiseric.....	Baltimore, Md.....	826
" 22.....	Steamship Everest.....	Harburg, Germany.....	1,664
" 25.....	Steamship Rio Tinto.....	Hull, England.....	1,985
" 30.....	Steamship Elmville.....	Harburg, Germany.....	2,384
Aug. 5.....	Steamship Concord.....	Garston, England.....	2,491
" 6.....	Bark Concordia.....	Hamburg, Germany.....	2,240
" 12.....	Bark E. Dingle.....	Rotterdam, Holland.....	708
" 18.....	Schooner C. C. Dame.....	Ambuch, Wales.....	428
" 23.....	Steamship Kennett.....	Baltimore, Md.....	815
" 23.....	Steamship Milo.....	Stettin, Germany.....	2,355
" 23.....	Steamship Rothersey.....	Gottenburg and Stockholm.....	2,280
" 25.....	Steamship Flamboro.....	Harburg, Germany.....	2,510
" 26.....	Bark Glenhantley.....	Hull and Aberdeen.....	2,301
" 27.....	Bark Onataska.....	Cork, Ireland.....	740
Sept. 3.....	Steamship Ruabon.....	Barbadoes.....	590
" 6.....	Steamship Resolute.....	Garston, England.....	1,750
" 13.....	Schooner B. Hopkins.....	Hamburg, Germany.....	2,869
" 13.....	Steamship Bedlington.....	Baltimore, Md.....	750
" 13.....	Steamship Phoenix.....	Kingslynn, England.....	1,610
" 14.....	Steamship Storra Lee.....	Stettin, Germany.....	1,918
" 21.....	Steamship Lowlands.....	London, England.....	1,561
Oct. 7.....	Steamship J. M. Lockwood.....	London, England.....	2,315
" 13.....	Steamship Thornaby.....	London, England.....	1,680
" 15.....	Schooner K. V. Arken.....	Memel, Germany.....	2,244
" 22.....	Steamship Oaklands.....	Weymouth, Mass.....	587
" 26.....	Bark Flora.....	Harburg, Germany.....	2,413
" 26.....		La Rochelle, France.....	870

Total shipments in 1892 to November 1.....

105,944



Grade.	New Orleans.	New York.	Liverpool.
Middling.....	9½	9½	4 15-16
Low middling....	8½	8½	4 13-16
Good ordinary...	8¾	8¾	4 11-16
Tone of market.	Steady.	Steady.	Firm.

## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on pages 328 and 329.]

## Development of Cotton Manufacture.

## III.

## Improved Carding Machinery.

The development of the cotton manufacturing business in the United States has been something remarkable. In the South has it been particularly progressive. The writer has obtained a few facts in regard to this subject by traveling throughout the important manufacturing districts of the United States. He remained in the South two years, and for seven years was interested in the development of the cotton, wooden and silk industry in the State of California.

Previous to these journeys South and West the writer was connected with the textile business as conducted in the city of Lowell, Mass. At the present time he is indirectly interested with the manufacture of textile fabrics. After knocking around the country for something like twelve years, and after visiting all the important cotton and wool-raising States of the Union, including Texas, Mexico and Arizona, he has come to the conclusion that the Southern States of America are ahead, so far as advantages for a future development are concerned.

Nobody recognizes this fact better than the manufacturers of Fall River, Lowell and Lawrence, Mass. In conversation with the heads of some of the great plants in these cities, we have learned that they have much to fear in consequence of the rapid forward movement which has so characterized the South of late. Said the treasurer of a Lowell corporation: "We cannot compete with the South in the manufacture of certain lines of coarse cotton goods. Down there they get help just as cheap as we can here. It costs them a little more to get machinery set up, but that is a small matter when compared with the numerous other benefits derived." He further stated that the cost of fuel was cheaper in many places in the South, and in these days of competition this is a matter of importance.

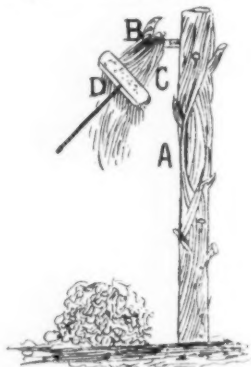
The introduction of the new improved roll-top cards has done much towards assisting the smaller cotton mills of the South to increase the capacity of their machinery. When the heavy English card had to be purchased exclusively and at a high price, manufacturers hesitated before purchasing to a great extent. Of course, where the carding capacity of the mill is limited, it means that the spinning, weaving and finishing machinery must be correspondingly diminished in size. To-day the Southern manufacturer can obtain these new cotton cards at a very low cost, comparatively, and this is an encouragement for him to buy more machinery.

Ten years ago it was difficult for the mill-owner to procure skilled help for the Southern mill except at very exorbitant salaries. It was necessary very often to import experienced operatives from the North. This was not only expensive, but in many cases proved quite unsatisfactory. The writer has in mind now an instance of a man who was engaged to go to the South by a Northern agency. The Southern mill had sent word to the Northern employment agency to procure a loom-fixer who could take charge of a weave room. The man was engaged for \$3.50 per day. He arrived at his Southern destination all right, but was very much dissatisfied with the mill, the town, and, in fact, everything connected with the affair. In a week's time he had left and another man was sent for, and he too left in a short time. This is a sample of the troubles which were almost weekly experienced by Southern

manufacturers a few years ago. To-day it is very different. The manufacturer has his regular set of help. The superintendent, the foremen, the loom-fixers and the spinners and weavers have their homes in close proximity with the mill, and in case one leaves or is out for a day or two, there is another ready to step into his or her place. Of course, if a manufacturer wants a man of advanced knowledge, such as a superintendent or a skilled designer, he finds it necessary to send out of his State. But even the Northern manufacturer often imports his head superintendent or designer from Europe or England. So far as the question of help is concerned, the Southern mill has as good a field to select from as the Northern.

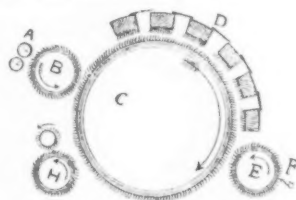
Great was the cry of fear from Northern millmen when the 56-hour law was passed in the State of Massachusetts a short time ago. "We cannot stand a reduction in hours," they said, "because our Southern competitors are beginning to compete too severely." The writer attended several of the meetings which the manufacturers held in order to invent a method to overthrow this bill, which they claimed would give the Southern manufacturer an advantage. Thus it is quite evident that the South has moved upward on the ladder of success, and that it will continue to move in the same progressive way till it attains a point as high, if not higher, than that of the mills in the North. If this were not the case, the Northern men would not hold meetings about this matter, nor would they care a whit whether the Southern mills operated their machinery ten hours per day or twelve, while their own mills are compelled by law to run but fifty-six hours per week.

One of the chief factors which has given a prominent impetus to Southern cotton industries is the adoption of the new cards as referred to above. This fact figures so prominently in the cotton trade that a few words about it may not be out of place here. In days of old cotton was carded by hand in this fashion:



CARDING COTTON IN DAYS OF OLD.

This method was a slow one, and many hours were devoted to carding a few pounds and preparing it for the spinning process. But now we have the improved power cards, in which every movement is automatically accomplished. In the above sketch the post into which the hook B is driven is represented by A. The attendant would take the comb D in the hand and draw it repeatedly through the cotton C. The modern card is shown below:



THE COTTON CARD OF TO-DAY.

In this illustration the cylinder of the card is marked C, and it will operate advantageously 160 times per minute. The diameter of the cylinder is forty-eight

inches. The doffer B is twenty-eight inches in diameter. The top-flat system D is used. There are forty-six flats altogether. The feed and delivery cylinders are designated by A, E and F, respectively. The patent stripper arrangement H is a feature of the card. The mechanism for lifting and replacing the flats is very ingenious. This is an outlined description of the famous flat-top cards which have done so much toward the development of the cotton industry in the Southern States of America.

## A New Cotton Bagging.

Among the subjects discussed at the recent New England Cotton Manufacturers' meeting was a new covering for cotton bales, which was described by Mr. Thompson, who said that his attention had been called to it by a fire at the River Point (R. I.) Mills, by which \$100,000 worth of cotton was lost, with very little insurance upon it. The covering is a fire-proof, asbestos mixture in which wire is mingled to give it stiffness and strength, and over the whole wire netting is drawn. Replying to questions, Mr. Thompson stated that with this covering the cost to the grower was about the same as 1½-pound bagging. It was seventy-five cents a bale, while one and one-half bagging costs the grower eighty-five cents a bale and two and one-half \$1.05 a bale.

The weight of the covering is about equal to the 2-pound ordinary covering, and the bales hold more than the average bale of compressed cotton, about 500 pounds, and occupy somewhat less space. Mr. Atkinson then stated that when this new covering was brought out the Mutual Company examined it and found that, while it was fire-proof, it excluded the air from the cotton to such an extent as to cause it to be injured. Since that time the inventor, H. O. King, of Atlanta, Ga., has succeeded in making the covering successful in repelling fire, while giving considerable air to the cotton. There was nothing to be said against this covering; it answered every requirement; the bales do not bulge; its cost is less, and it is no heavier, and he thought the used wrappers were of more value than the present wrappers.

## Southern Textile Notes.

THE Adams Cotton Mills at Montgomery, Ala., will be sold at public auction on December 12th by Messrs. J. W. Dimmick and Robert Goldthwaite, receivers.

THE mill property of the Jackson (Tenn.) Wooden Manufacturing Co. will be sold at public auction on the 22d instant by the Safe Deposit, Trust & Banking Co. of Nashville, trustee.

A NEW cotton mill with a capital stock of \$100,000 has been secured for establishment in Elizabethton, Tenn. The Co-operative Town Co. has contracted for the plant and states that it will employ 150 hands.

THE Roanoke Board of Trade is still engaged in plans for establishing a cotton mill in Roanoke. A \$250,000 stock company is proposed, and a considerable amount of the capital has been subscribed. A charter will likely be applied for in a few weeks.

THE Frankel Manufacturing Co., of Baltimore, manufacturers of hosiery and jackets, are running in full with thirty knitting machines and ten sewing machines operating. Mr. Jacob Frankel is the proprietor of this plant, and he has recently put in new sinks for his seamless knitters. The entire product of jackets from this mill is sold to the 1st of January.

MR. A. F. PARKER, superintendent of the Manchester Cotton Mills at Fort Worth, Texas, is considering the establishment of a cotton mill at Terrell. He proposes, if he can procure proper encouragement from the citizens, to purchase the machinery of

the old Terrell cotton mill and add whatever other machinery is needed to fully equip a plant.

THE cotton factory of the Paragon Manufacturing Co. at Columbus, Ga., will be sold at public auction on the first Tuesday in January, 1893. G. M. Williams is the receiver of the company.

THE assignment is reported of the Oakdale Manufacturing Co., of Jamestown, N. C., manufacturers of cotton yarns, warps, twines, etc. The cause is said to be the previous assignment of Mr. Marshall A. Phillips, of Philadelphia, who is president and principal owner of the company.

THE erection of a cotton mill at Sandersville, Ga., is proposed. Mr. S. G. Lang is now soliciting subscriptions to a stock company.

THE Oak Hill Hosiery Mill, of Greensboro, N. C., has put in cards and spindles, and in future it will turn out its own yarns. The plant operates forty-five knitting machines.

BOOKS of subscription for a new cotton mill have been opened at Aiken, S. C. It is proposed to form a \$150,000 stock company and manufacture carpet yarn from colored cotton. Dr. P. G. Croft can supply any information of this project.

F. TURNER, who has for some time been connected with the Tuscaloosa (Ala.) Manufacturing Co., has purchased an interest in the Tuscaloosa Cotton Rope Mills, and taken charge of them as manager and superintendent.

A NEW cotton manufacturing plant to be built at Athens, Ga., is the Alpha Mills, chartered last month by W. D. Griffith and Henry Lovern. Two thousand spindles will be operated on No. 5 yarns and cotton rope will also be made.

MR. SAM F. GILL, secretary of the Board of Trade of Meridian, Miss., writes us that a \$25,000 stock company has been formed in that city for the purpose of erecting a knitting mill. He says that the machinery has all been ordered, and that operations will commence as soon as it can be received and placed.

THE directors of the Pulaski Knitting Mills at Savannah, Ga., held a meeting within the week to discuss the status of the company and consider plans for resuming operation. The plant has been closed temporarily, mainly on account of the lack of skilled labor. The plant will doubtless soon resume, as it is in fine shape and well balanced financially.

THE buildings have been completed for the new cotton mill which is to be established on the Raleigh Electric Line near Memphis, Tenn., and the machinery has arrived. It is now being placed, and operations will soon commence. The owner of the plant is Mr. D. J. Griffing, of Boston, Mass., and he will operate as the Highland Manufacturing Co. Bating, carpet lining and shoddy will be manufactured.

THE Wennonah Cotton Mills, of Lexington, N. C., have recently considerably improved their plant, adding fourteen additional looms and a new 200 horse-power Harris-Corliss engine. The mill has now 4,000 spindles and 226 looms operating and is running in fine shape. Mr. C. A. Hunt is treasurer and superintendent of the mill.

THE King's Mountain (N. C.) Manufacturing Co., manufacturers of cotton yarns, has its mill in full operation, running forty looms and 5,000 spindles, 2,500 of which have just been added. The addition of fifty more looms is now contemplated. W. A. Mauney is president of this concern, and J. M. Rhodes, secretary and treasurer. Mr. O. M. Harper, of New York, is their selling agent.

THE erection of a new knitting mill at Edenton, N. C., is reported, and Mr. Theodore Ralph is mentioned as interested.



## RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on pages 329.]

## Baltimore &amp; Ohio Prosperity.

The recent action of the directors of the Baltimore & Ohio in declaring a semi-annual dividend of 2½ per cent. is generally accepted to mean that the property is in a position to continue paying regular dividends of that rate. There does not appear any cause to prevent the continuance of this stock as a 5 per cent. dividend payer, the outlook for an especially large traffic being particularly inviting. The policy pursued of late by the management of making extensive betterments involving heavy expenditures, and charging these to the operating or expense account, of course is seen in a decrease in net earnings, but the physical condition of the property and its equipment has been placed on a footing superior to any heretofore attained. The company has been preparing for the traffic incident to the World's Fair as well as the steady growth of its regular business, and the permanent improvements completed and rapidly progressing towards completion are of such a character as to make them important factors in the handling of an immense and profitable traffic. To President Mayer's able administration of the affairs of the company belongs the credit of the Baltimore & Ohio's present financial standing, and the confidence reposed in him by some of the largest interests in the property, as evidenced by the power placed in his hands of voting the large block of stock held by the Baltimore & Ohio voting trust, is the best indication of the high esteem in which he is held.

## Vicksburg, Shreveport &amp; Pacific.

The following details of the annual report of President Schiff, of the Vicksburg, Shreveport & Pacific Railroad, for the fiscal year ended June 30, 1892, are given: Gross earnings \$632,870, operating expenses and taxes \$478,987, net earnings \$153,883, freight moved 180,082 tons, passengers carried 188,653. The earnings from passenger traffic were \$183,831, freight \$366,079, mail and express, etc., \$82,960. In comparison with the previous year the gross earnings show a decrease of \$3,811, operating expenses, including taxes, a decrease of \$429, and the net revenue a decrease of \$3,381. The freight traffic increased 33,502 tons, but the passenger traffic fell off 5.11 per cent. The heavy increase in freight traffic of more than 22 per cent. is attributed to the increase in cotton, owing to the large crop of last year, but which cannot be looked upon as indicating a permanent addition of business, the increase in lumber traffic due to the development of the lumber industry on the line of the road and the natural increase in coal traffic. The income account evidences an improvement in the company's finances. The receipts, including net earnings, proceeds from land sales, etc., are \$198,624; against this are disbursements of \$393,147 for interest on bonds and \$5,410 for interest on car trusts, a total of \$398,557, and making a deficit of \$199,933, which, however, is \$44,457 less than the deficit of 1890-91.

## East Tennessee's New Directory.

At the annual meeting of stockholders of the East Tennessee, Virginia & Georgia Railroad, held at Knoxville, Tenn., on November 16, directors were elected as follows: Samuel Thomas, Calvin S. Brice, William P. Clyde, R. G. Erwin, George J. Gould, R. S. Hayes, C. M. McGhee, John G. Moore, J. C. Maiben, Thomas L. Manson, Jr., W. G. Oakman, Thomas F. Ryan, E. J. Sanford, George F. Stone, W. E. Strong. William P. Clyde is one of the

receivers of the Richmond & Danville road. John G. Moore is a Richmond & Danville director, and W. G. Oakman is president of the Richmond & Danville, and is also president of the East Tennessee, Virginia & Georgia. Messrs. Thomas, Brice, Moore, Erwin, Gould, McGhee and Sanford were members of the retiring board. An interesting phase of the East Tennessee situation is the default of \$5,460,000 general mortgage bonds on which semi-annual interest to the amount of \$136,500 is due December 1.

## Middle Georgia &amp; Atlantic.

The Middle Georgia & Atlantic Railroad, which is being built by the Seaboard Company, is designed to be an air line from Atlanta to Savannah, a distance of about 245 miles. Twenty miles of the road are built and in profitable operation, and about \$175,000 has just been raised to complete the line from Machen to Covington, Ga., which will give forty-four miles of road extending from Eatonton to Covington. When this is done it is contemplated to bond the road to continue its construction to Savannah, but there is, however, still talk of reaching that place through the purchase of or consolidation with the Macon & Atlantic, which is graded to within twenty-one miles of Savannah. There is a contingency, which seems, however, very remote, that in the event of the Louisville & Nashville or some other company building down from Chattanooga to Eatonton the Seaboard Company would stop building after its line is finished from Eatonton to Savannah and become part of an air line from Savannah to Chattanooga and a short route to the West and Northwest.

## Decatur, Chesapeake &amp; New Orleans.

It is likely that the litigation in which the Decatur, Chesapeake & New Orleans Railway has been involved for some time will be speedily terminated. The claims against the road aggregate \$710,000. A plan which has been approved by nearly all of the creditors provides for the taking up of all outstanding stocks and bonds now held by a portion of the New York creditors, who agree to surrender their holdings and come into the compromise. The outstanding indebtedness is to be settled by issuing second mortgage bonds. In addition a first mortgage is to be executed for \$300,000, and the proceeds used to equip and complete the road from Shelbyville to Decatur. The road is projected from Gallatin, Tenn., to Aberdeen, Miss., a distance of 250 miles, and is completed from Booneville, Tenn., to the Alabama and Tennessee State line, a distance of thirty-four miles. It is understood that there are twenty-nine miles of the road graded and ready for the tracks, and that some material is on hand. The property was placed in a receiver's hands in December, 1890.

## Mobile &amp; Girard Railroad.

The Mobile & Girard Railroad, which has been placed in the hands of C. T. Pollard, of Montgomery, Ala., as receiver, extends from Columbus, Ga., to Saginaw, Ala., a distance of 135 miles, and was leased from June 1, 1886, for ninety-nine years to the Central Railroad of Georgia at a guarantee of 1½ per cent. per annum on the stock. The application for a receiver was made by C. S. Lee et al., minority stockholders, who claimed that the agreement with the Central was void, because the Mobile & Girard Railroad, being an Alabama corporation, could not, under the laws of that State, turn over its property for operation to a foreign corporation like the Central of Georgia. The bill also stated that the Central is prohibited by the constitution of Georgia, under which State it holds its charter, and to the laws of which it is amenable, from buying shares

of stock in or make any contracts with any corporation that would have the effect of lessening competition.

The receiver has reported to the court that he is unable to operate the property because of a want of rolling stock, all of which is in the hands of Receiver Comer, of the Central. The latter states that the only rolling stock belonging to the Mobile & Girard were two old and inferior locomotives, and that the arrangement made by the stockholders of the Mobile & Girard with the Central six years ago enabled the former to continue its existence.

## South Carolina's Railroad Assessment.

The assessments of the railroads in South Carolina for taxation for 1892 shows an increase in the figures of nearly \$750,000 over the preceding year. The railroad board has assessed this property up to its full value, and these companies will pay a large proportion of the taxes of the State. The total assessment is \$26,783,607, distributed among thirty-five counties. Abbeville county returns the highest amount for any one county, viz., \$1,658,470, and there are nine other counties footing up over \$1,000,000 each. Chesterfield county reports the lowest assessment, viz., \$61,700. Some figures relative to the railroad earnings in this State in this connection are suggestive. The total gross earnings of all the roads for September, as compared with the same month of 1891, show a net decrease of \$68,721, or more than 10 per cent., and this is said to be not as bad as has been during the summer months. Railroad property is not taxed on an assessment to its full value in every State, and the South Carolina authorities, in view of the present earning capacity of the roads in that State, would find it a better policy to lighten instead of increasing their burdens.

## Railroad Notes.

THE latest report from the committee appointed to represent the underlying bondholders of the Richmond & Danville system is that they are making very satisfactory progress; large numbers of bonds already deposited and several large blocks of bonds engaged. They are now arranging to have a New York representative on the committee and a trust company in New York where bonds can be deposited under the agreement.

THE gross earnings of the South Bound Railroad for the month of September were \$20,554 and the expenses were \$13,312, making net earnings of \$7,242. The gross earnings in August were \$17,926, and the earning capacity of the company is steadily moving upward.

C. P. HUNTINGTON, president of the Southern Pacific, is on his way back from the celebration of the completion of the Mexican International Railway, and it is thought will make a tour of inspection of the San Antonio & Aransas Pass Railroad, which his company contemplates buying.

THE Durham & Northern Railroad Co.'s stockholders met lately at Raleigh, N. C., and re-elected its old officers and declared a dividend of 2 per cent. The reports of the president and superintendent showed that the road was in a good condition and doing a good business. The president, Major John C. Winder, of Raleigh, is one of the few railroad presidents in the country that serve without a salary.

THE following compose the committee appointed at the recent bondholders' meeting of the Georgia Southern & Florida Railroad Co. to represent their interests: H. P. Smart, of Savannah, Ga.; Thomas B. Gresham, of Baltimore; D. U. Herrmann, of New York; William Checkley Shaw, of Baltimore; Charles Watkins, of Richmond, Va.; Henry Rice, of New York, and Charles D. Fisher, of Baltimore. The first mortgage bondholders are called

upon to deposit their securities with the Mercantile Trust & Deposit Co. of Baltimore, which will issue negotiable receipts therefor.

THE Missouri, Kansas & Texas will, it is understood, soon be in the market as a seller of about \$5,000,000 of new bonds, which are to be issued to pay for the construction of the 180-mile line from Franklin to St. Louis, Mo., by which this system obtains a direct route to the latter city. The extensions in Texas will also require the raising of funds by a further issue of bonds, authority for which has been secured by the amendment of its Texas charter. It is learned that the officials of the company together with a party of persons interested in the road contemplate an early tour of inspection of the property.

THE annual meeting of the stockholders of the Charlotte, Columbia & Augusta Railroad Co. will be held at Columbia, S. C., on December 7.

THE amount needful to pay interest on the Texas & Pacific first mortgage bonds has been deposited in a New York bank.

THE annual meeting of the Shenandoah Valley branch of the Baltimore & Ohio, which operates under the name of the Valley Railroad Co., was held at Lexington, Va., on November 15. C. F. Mayer, of Baltimore, was re-elected president, W. H. Ijams, secretary, and the old board was also re-elected. The fiscal year was changed from September 30 to June 30. The annual report of President Mayer, based upon nine months ended in June, 1892, shows: Gross earnings 1891, traffic, \$108,976.50; gross earnings 1892, \$98,977.01; total expenses 1891, \$82,801.38; total expenses 1892, \$93,149.02; net earnings 1891, \$28,234.51; net earnings 1892, \$7,643.65.

THE Baltimore & Ohio Railroad Co. has determined that from now until next spring, at least, its shops at Mount Clare and Bailey's in Baltimore; Grafton, W. Va.; Glenwood, near Pittsburg, Pa., and Newark, Ohio, shall be run to their full capacity. This action will give employment to nearly 2,000 men at Baltimore alone. The company has just placed orders with the Baldwin Locomotive Works for sixty first-class locomotives and will, it is stated, contract with other concerns for forty more. It will also contract for 2,000 box cars and 500 gondolas.

At the annual meeting of the Richmond, Fredericksburg & Potomac Railroad Co., held in Richmond, Va., on November 16, the old officers were re-elected. The report of the board of directors shows gross revenue to be \$746,528; operating expenses \$455,577; fixed charges and interest \$84,457; net revenue \$206,494.41; dividends paid \$156,660; surplus \$49,834; betterments \$17,896; net surplus \$31,938. A dividend of 3½ per cent., payable January 2, 1893, was declared.

THE extension of the Chicago, Rock Island & Pacific from Minco, I. T., south into Texas, which has been under way for nearly a year, is now rapidly approaching completion, and this system will probably be operating in Texas by December 15. Its terminus is to be at Bowie, Texas, from which place all the principal cities of Texas and the Gulf coast will be reached by traffic arrangements.

THE Pine Mountain Iron & Coal Co., of Pineville, Ky., has assigned and placed its assets in the hands of the Germania Safety Vault & Trust Co. The concern is regarded as solvent, and simply wishes to wind up its affairs and cease business.

THE Missouri Pacific Railroad has purchased 8,000 acres of coal lands in Franklin county, Ark., and will commence developments immediately. Large coaling station is to be established at the mines; will be operated by electricity and compressed air.

## Manufacturers' Record.

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BALTIMORE, NOVEMBER 18, 1892.

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tisements or changes should be received not  
later than Tuesday noon to ensure attention  
in the issue bearing date of the following  
Friday. Reading matter should be in our  
office on Wednesday, although late news can  
be received early Thursday morning.*

DURING the next two weeks work will  
begin on the jetties at Sabine Pass,  
Texas. In the appropriation for carry-  
ing on this work, \$350,000 is for the pur-  
pose of completing the west jetty.  
About \$75,000 of this will be used on  
mattress work and the remainder on  
rock. The Southern Pacific Railroad  
has made preparations to handle a large  
amount of the material which will be  
used.

DURING the year ended October 31,  
1892, there were seventy-nine corpora-  
tions chartered in South Carolina with  
an aggregate capital stock of \$4,521,000.  
The same period also shows an increase  
of \$448,750 in the capital stock of exist-  
ing companies. The purpose of the  
new concerns are widely diversified,  
covering manufacturing, financial, mer-  
cantile and other operations. The  
enlistment of so much new capital with  
the consequent interesting of new peo-  
ple in the upbuilding of the State and  
the development of its resources in-  
creases confidence in its future pros-  
perity.

CHEMICAL works are being erected at  
the extensive charcoal kilns operating at  
Harrietta, Wexford county, Mich., which  
will take the gases and wood liquor  
from the kilns and refine the liquor,  
separating wood alcohol, acetate of lime  
and tar. The methyl, or wood alcohol,  
will be brought to about 75 per cent.,  
worth eighty cents a gallon. This prod-  
uct is rectified to 95 per cent. by New  
York chemical houses, and in this State  
is worth about \$1.20 per gallon. The

collection of these by-products has been  
tried at several places in the South, but  
we believe it has never been very suc-  
cessful. This has been owing largely to  
the inherent objection of all charcoal  
furnace managers to a coal made in  
either retorts or closed kilns. Another  
reason which has had a strong influence  
against them is that some of the systems  
tried were faulty in principle and con-  
struction, and under the best manage-  
ment could not have succeeded. Other  
plants, well built, have been poorly  
managed. These are facts which  
have come under our observation,  
but failures in the past from such causes  
do not prove the saving of by-products  
impossible or unprofitable when a good  
system is adopted and the plant well  
managed. Charcoal iron is selling at a  
figure which leaves little margin of  
profit for the producer, and there is  
little probability of its going much  
higher. The problem is, therefore, to  
reduce the cost of production, and in no  
way can such a material saving be  
effected as in retaining and selling the  
products which are now allowed to  
waste at the kilns.

### Birmingham's Industrial Growth.

The census bulletin which presents  
the manufacturing statistics for Birming-  
ham, Ala., is one of the most interesting  
that has yet been issued, and it sets  
forth in a striking manner the wonderful  
growth of the great Southern iron centre.  
The almost magic rise of Birmingham  
from nothing to a great industrial centre  
in a few years is always an interesting  
topic, and it becomes doubly so when  
such figures as those furnished by this  
census bulletin are available. When  
the census of 1880 was taken there were  
no manufacturing establishments within  
the limits of the present city of Birming-  
ham, and no mention was made of that  
now prosperous city. At the time of  
taking the eleventh census, June 30,  
1890, the industries of Birmingham made  
the following showing:

Number of establishments.....	233
Capital invested.....	\$3,401,835
Number of hands employed.....	2,869
Wages paid.....	\$1,523,375
Cost of materials used.....	2,363,443
Value of product.....	5,236,609

But these figures do not represent all  
of the growth of Birmingham, for many  
of the most important iron-making  
plants which properly belong to the  
industries of the city are just beyond  
the corporate limits, and are, therefore,  
not included in the figures given above.  
In 1880 Jefferson county, which includes  
Birmingham and its outlying industries,  
reported only thirty-six establishments,  
with capital of \$1,420,125, employing 301  
hands, to whom wages were paid  
amounting to \$96,314. The cost of the  
materials used in the tenth census period  
was \$361,879, and the value of the prod-  
ucts was \$757,741. What the eleventh  
census will show for Jefferson county  
will be of much interest.

### Waste of Fuel in Locomotives.

A recent issue of the *Railroad and  
Engineering Journal*, giving locomotive  
returns for July, shows that during that  
month the locomotive mileage on thirty-  
five railroads was over 26,500,000 miles,  
while the fuel used averaged 70.28  
pounds per mile and cost 6.76 cents per  
mile. This equals a consumption of

938,075 net tons of coal by these roads  
during one month, which, at an average  
cost of \$1.92 per ton, makes a total  
expense of \$1,801,104 for fuel.

According to Poor's Manual the total  
revenue train miles in 1891 were 831,-  
202,376 miles. Applying the same aver-  
ages, it is found that to operate these  
roads 29,208,451 tons of coal were used,  
and assuming the average cost at \$1.92  
per ton, the total cost was \$56,080,225.  
These figures represent only the cost in  
actual revenue service, and do not in-  
clude that used for shifting and other  
purposes.

When it is remembered that coal  
burned under a locomotive boiler never  
gives more than 75 per cent. of its  
theoretical efficiency and averages only  
about 55 per cent., it is possible to real-  
ize the enormous loss of power and  
money daily taking place. If locomo-  
tive boilers could be constructed so as  
to give the theoretical efficiency of coal  
there would have been saved to the  
railroads last year over \$25,000,000, or,  
instead of using 29,000,000 tons of coal,  
16,000,000 tons would have answered the  
same purpose.

It is not a difficult matter to see where  
the loss takes place, but it is not so easy  
to remedy it. One important source of  
loss is the high temperature of gases  
issuing from the smokestack; another is  
the fine coal blown into the extension  
front or out into the air; still another is  
the unburned carbon in ash and clinkers.  
The compounding of locomotive cylin-  
ders has resulted in a material saving of  
fuel, but there is ample opportunity for  
the exercise of further inventive genius  
in the same direction.

### Satisfactory Business Condi- tions in the South.

If there be any weight to the opinions  
of Southern business men as expressed  
in their letters to us, if the views of  
the Southern press from Maryland to  
Texas be entitled to consideration as  
expressive of Southern sentiment, if  
there be any significance in the organi-  
zation of numerous large enterprises in-  
volving the investment of large amounts  
of capital in the South—then we surely  
make no mistake in asserting that the  
South is now entering a period of great  
commercial and industrial activity.  
There is no semblance of a return of  
the boom of two years ago, there is no  
indication of speculative enterprises  
based upon inflated real estate values,  
there is no tendency to force business into  
unnatural activity. The present im-  
proved conditions represent more closely  
the normal state of the South and the  
natural unrestrained growth of that  
section than could have been seen in  
any general survey of the Southern half  
of this country during several years  
past. The removal of the restraining  
influences which have hindered and  
obstructed Southern development for  
nearly two years has permitted the  
South to resume its natural rate of prog-  
ress. It is this, and nothing else, that  
explains the improved conditions now  
manifest so strikingly throughout the  
South.

Just at this time, as the excitement of  
the presidential campaign is passing  
away, there is a disposition to ascribe  
changes for better or worse to political  
causes. To the Democratic mind the  
brighter prospects in the South seem

due to the restoration of Democracy to  
power, while Republican eyes regard  
the existing satisfactory conditions as  
the natural result of four years of  
Republican rule and two years of Mc-  
Kinley tariff. There is doubtless a  
measure of truth in each of these views  
of the situation, but apart from the  
increased confidence in the South  
resulting from the dispersion of the  
"force bill" nightmare, the improve-  
ment is due more to natural and  
economic causes than to political influ-  
ences. The fear of negro domination  
has been a dreaded factor in the South  
for three years past, and the removal of  
this danger affords great relief to  
financial interests in the South and  
restores confidence in the minds of  
capitalists elsewhere.

The most potent influences in the  
South that are bringing about improved  
conditions can be briefly told. The re-  
striction of credit during the past year  
has compelled the planters to pay their  
bills and practice economy, thus re-  
ducing in an appreciable degree the  
cost of raising the present cotton crop.  
The large reduction in the cotton acre-  
age of this season, which promises to  
yield not more than 7,000,000 bales, as  
compared with over 9,000,000 bales last  
season, has advanced prices  $\frac{3}{8}$ c. above  
the figures ruling at this time last year,  
and before the crop comes in the plant-  
ers will realize a handsome profit. Much  
of the acreage withdrawn from  
cotton has been devoted to food crops,  
the result of which will be more cash in  
the South and less dependence upon  
the West.

The condition of other agricultural  
interests in the South is equally satisfac-  
tory. The rice crop of this season is  
the largest ever raised, and the sugar  
production for the year just begun is  
estimated to be about 70,000 tons in  
excess of last season. Increased atten-  
tion is being given to the higher  
branches of agriculture, the raising of  
fruits, tobacco on the eastern coast, and  
a market for Florida fruit is now being  
opened in England which promises  
good results. The soil of the South is  
being made to yield more profitable  
returns than ever before.

The leading industrial interests of the  
South have been developing steadily  
during the past year, and while less at-  
tention has been given to establishing  
new enterprises, the existing concerns  
have been continuously in operation,  
and their business has yielded a good  
margin of profit. The lumber industry  
is handling an enormous volume of  
business, and, judging by the amount of  
woodworking machinery that is going  
South, this branch of manufacture is  
rapidly expanding. Every branch of  
the mining industry shows activity, and  
the iron trade has preserved its equi-  
librium under trying circumstances,  
which have been felt more severely in  
the older producing sections than in the  
South.

The substance of the situation is this:  
Business conditions in the South have  
improved marvelously during the  
past year, and there was never a more  
advantageous time than the present for  
the establishment of new industries and  
the investment of capital in the South.  
Whether this be due to political or econ-  
omic causes does not concern us or alter  
the fact that the conditions we have cited  
do exist.



## CORRESPONDENCE

## The Administration of Governor Hogg

LA FAYETTE, TEXAS, November 3.  
*Editor Manufacturers' Record:*

Your journal is confessedly one of the most ably edited and widely circulated of the several publications which have for their object to foster the growth of industries in the South. Recognizing it in this light under both its former and present management, it has received, particularly in the South, an extensive patronage, and has heretofore inspired a degree of confidence in its loyalty to the best interests of each and every State south of Mason and Dixon's line which must have been a source of gratification. In view of this fact we have read, with astonishment and regret, an editorial in your issue of October 28 on the subject of "Misrule in Texas." It occurs to us that in this article an injury has been inflicted not only on the entire Commonwealth, but especially on the manufacturing enterprises within her borders—those that are well established as well as such as are struggling into existence. That for many years past there has been a growing desire among the people that State and national legislation should be so framed as not to destroy corporations, but to subject them to proper control, will not be denied. Texas has not been more pronounced in this inclination than the other States in the Union. It is not the purpose of this article so much to defend Governor Hogg, who, doubtless, is able to protect himself against both his domestic and foreign calumniators, as to insist that if, as asserted in the editorial of which we complain, Texas is suffering from "a dangerous malady—a blight that dwarfs and cripples the growth of the State," she has been reduced to that deplorable condition not by the policy of the administration, but by the utterances of some of her public men and newspapers, who are seeking from interested motives to exaggerate the conduct of affairs by the governor into hostility to capital and corporations. These men and journals, unknown generally beyond the limits of Texas, have written and spoken things concerning the administration which, having once gained publicity, reached money centres, and, irrespective of truth or falsity, did the State serious damage.

What Texas paper contained the interview of Mr. R. Behrens, who visited Nottingham, England, in behalf of the lace-making factory on Galveston island, and who the gentlemen are in Texas to whom Mr. Swenson, of New York, wrote the results of his trip to Sweden, are to us unknown. Nor is it necessary they should be known. The material question is, has there been such legislation in the State under the present executive as, apart from the declarations of the "calamity howlers," would have produced the direful consequences you so greatly lament, and many illustrations of which you say your own experience and observation furnish?

The most violent defamers of the present administration point to the Alien Land Law and the Railroad Commission Law as its chief blunders. The first measure, at least in the form in which it was originally enacted, was unwise; but that, as stated by Mr. Swenson, its legitimate effect was to create distrust in the public honesty of the State, we deny. It is well known that the first law was pronounced unconstitutional by the Supreme Court of Texas, and that a special session of the legislature, subsequently convened, enacted another on the same subject, to which no objection has been urged. If this be so, how can it be pretended by either domestic or foreign capital that it retires from the State because, forsooth, the people "may tomorrow pass another similar law?" Do not these croakers know that other States

have "alien land laws" more onerous in character than the one first formulated in Texas, notably among them New York, where is more capital than in any other section of the country, and in whose great commercial city annually disembark more immigrants from foreign nations than arrive at all other seaports in the United States?

But those who cannot find sufficient justification of their abuse of Governor Hogg in his attitude towards aliens, seek to justify their strictures by reason of his relation to the railroad commission.

Did railroads need to be regulated? This question has been answered in the affirmative by the passage by Congress of the interstate bill and of commission laws by twenty-seven States of the Union. This legislation, both State and national, but voiced the demand of the people from Maine to the Gulf. Nowhere existed a more imperative necessity for it than in Texas. Of "enormous resources and of possibilities as magnificent as its territorial greatness," it seemed the settled purpose of the railroad magnates and syndicates that she should forever remain nothing but a farming country. If an effort was made to develop her minerals or convert her raw materials into articles of commerce by the establishment of manufactories within her borders, the imposition of discriminative and ruinous rates stifled them in their incipency or permitted to them a lingering and unremunerative existence. This statement can be abundantly sustained by evidence from many portions of the State. To correct this evil was the object, and the only object, of the law. No sooner was it placed on the statute book than manufacturing plants from which all activity had departed resumed operations.

How can it be said that Governor Hogg is inimical to railroads when, during his administration, more miles of railroad have been built in Texas than in any Southern State save one?

But has he clogged the wheels of progress in reference to other enterprises? We have before us the MANUFACTURERS' RECORD of October 7, 21 and 28, the last of the three containing your editorial on which we have been commenting. By reference to the Construction Department it appears that within the brief space covered by these three issues of your paper twenty-nine new industries have been commenced in the State involving the investment and outlay of large amounts of capital. Whatever may be the position of the MANUFACTURERS' RECORD in relation to the contestants in the gubernatorial race, the legitimate conclusion to be drawn is that it was a boost for Judge Clark, who, if elected, will owe his success to the negro vote.

Your editorial, in the opinion of the company, has done Texas more injury than you can repair in years to come.

Please forward our bill and discontinue the MANUFACTURERS' RECORD.

BESSEMER IRON MINING & MFG. CO.

## Oil in Arkansas.

MAGAZINE, ARK., November 11.

*Editor Manufacturers' Record:*

I have had the superintendency of the Petit Jean Oil Co.'s works since their organization last spring, and during that time we have been earnestly pushing along, and this week were fortunate enough to strike a good flow of oil at 200 feet in depth at one of our wells. The oil is lubricating in character and promises to be inexhaustible. The town of Magazine is in Logan county, in the Petit Jean valley; total inhabitants of the town 400. It is surrounded by the most prosperous farmers found in the State. The soil is very rich, and everything tends to make this section the most desirable county in the State for farmers as well as business enterprises. B. F. KENNEDY.

## Business in Key West.

THE FIRST NATIONAL BANK,  
 KEY WEST, FLA., November 11.  
*Editor Manufacturers' Record:*

The leading manufacturing interest here is fine cigars from Cuban tobacco. The average output is from 90,000,000 to 100,000,000. This year the latter point will be reached. There has been no serious trouble, though more or less harassed with spasmodic and sporadic strikes, not for increase of wages, which are very liberal, but fanciful objections to which the Cuban cigarmakers are very susceptible. Indications favor a continued large output.

The sponge interest is of considerable importance, with a good summer catch and favorable reports from the fall fleet now out along the reefs.

Mercantile business has been fairly good and the stocks now in extra large.

The city and market hall is nearing completion, and negotiations are pending for placing \$100,000 city bonds, recently voted on, for water works and sewerage.

OSCAR REIERSON, Cashier.

## GENERAL NOTES.

## Brief Mention of Various Matters of Current Interest.

THE Mission Ridge Land Co., of Chattanooga, Tenn., has paid a 2½ per cent. cash dividend on its capital stock of \$216,000. The company owns valuable lands on and near Mission Ridge, and has among its assets notes and buildings which, with the land, are valued at more than the capitalization. The officers are: C. E. James, president; F. J. Bennett, vice-president, and Franklin Harris, secretary and treasurer.

It is reported that a single corporation will shortly be formed in Chicago, Ill., by the consolidation of the International Packing & Provision Co. and the Chicago Packing & Provision Co. The united companies will control over \$4,000,000 of reserved (or working) capital in addition to the plants represented by the stocks and bonds. The capitalization of the International, which is an English corporation formed last summer, is £850,000, and that of the Chicago Packing Company £400,000. The two companies have something like \$2,000,000 in outstanding bonds. There is a possibility that the Hammond and other packing companies will be drawn in later on.

A CITIZEN of Chattanooga has secured an injunction against the Chattanooga Electric Railroad Co. restraining them from laying their track in front of his property. The difficulty was caused by the electric railway company using T rails instead of the usual flat girder rail. The courts will decide the case.

S. C. BRANHAM, A. Allemond, H. H. Grimes, R. H. Oliver, J. L. Dosier, F. Fanner, J. S. Borschnick and J. R. Neps, all of Louisville, Ky., have recently spent several days in Rome, Ga. Some of the gentlemen are stockholders in the New Rome Land Co., and it is thought they and the others will shortly erect one or more manufacturing enterprises on the company's property.

A CHARTER has been granted to the Merchants and Manufacturers' Association of Norfolk, having for its purpose the promotion and protection of the mercantile, manufacturing, commercial and business interests of Norfolk and vicinity.

MR. T. G. ASHTON, of Thomas Ashton & Sons, Manchester, England, who is one of the largest stockholders in the American Association, Limited, has recently been in Middlesborough, Ky. He states that the stockholders of the association are well pleased with the management and pros-

pects of the place and hope shortly to see things moving ahead rapidly. Mr. Ashton says that the Watts plant will be put in operation at an early date, and also the South Boston Iron Works. When these are going he thinks there will be no difficulty in establishing other interests there.

PRESIDENT DIAZ and party were in Oajaca, Mexico, on November 14, to attend the formal opening of the Mexican Southern Railroad. The new line is conceded to be magnificently constructed, in the face of the greatest engineering difficulties. Experts say that it is the finest narrow-gauge railroad on the continent. Three years ago, when the construction commenced, it was said to be impossible, but President Diaz's foresight and determination conquered all difficulties. The length of the road is 367 kilometers. The earthwork constructed measured 3,000,000 cubic feet, of which 2,000,000 cubic feet is rock; 110,000 is solid masonry.

GOVERNOR FOSTER, of Louisiana, has issued the following call in regard to the meeting of the Nicaragua Canal commissioners in New Orleans: "Recognizing the importance of the Nicaragua Canal to this nation and the necessity for its early completion, I respectfully request the governors of all the States and Territories of the United States to appoint delegates to the Nicaragua Canal convention, which assembles at New Orleans on the 30th of November."

ON November 14th a large fire occurred in Winston, N. C., in which many business blocks were destroyed. The loss is estimated at \$350,000, covered by about \$250,000 insurance. Arrangements are under way to rebuild the portion of the town burned out.

It is not generally known that the addition of a small quantity of powdered lime to a blacksmith's fire will counteract the effect of sulphurous coal. This is of particular value in welding, as the presence of much sulphur in the coal used will effectually prevent a satisfactory weld from being made. Sprinkling the powdered lime over the coal before putting the metal in the fire is the best way of using it. Care must be taken to put plenty in the fire where the metal will rest.

CHARLESTON (S. C.) merchants, in discussing the advantages to be derived from the line of steamers to run semi-monthly between Baltimore, Md., and Jacksonville, Fla., touching at Charleston on the outward trip, state that the interval between steamers is too great to justify any expectations of large shipments from or to that port. They say that if the steamer sailed weekly it could command a large part of the shipments now made to and from New York.

It is said that endeavors are being made to organize a cotton mill company at La Fayette, Ala., but no names are mentioned in connection with the report.

THE Empire Plaid Mills, of High Point, N. C., manufacturers of a fine line of plaids, fancy denims, etc., have their plant in full operation at present and are operating 112 looms. Improvements have been made recently, including the introduction of a hydraulic extractor into the dyehouse. The officers of the company are B. L. Duke, president; E. H. C. Field, treasurer, and E. J. Stead, superintendent.

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises and needing machinery or supplies of any kind will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

## MECHANICAL.

### Friction and Lubrication.

By Albert D. Pentz.

I.

DECOULUMB, in or about 1780, found, among other things, that friction "is greater between the surfaces of like than of unlike material." This discovery indicated why joints, journals and bearings of brass on steel operate more smoothly together than those of either metal alone. Professor Tyndall, after a lapse of more than a century, supplements this discovery of DeCoulumb by proving that two plates of the same metal in contact over extended surfaces have so strong a mutual molecular attraction for each other in a vacuum that the upper one supports the under one easily

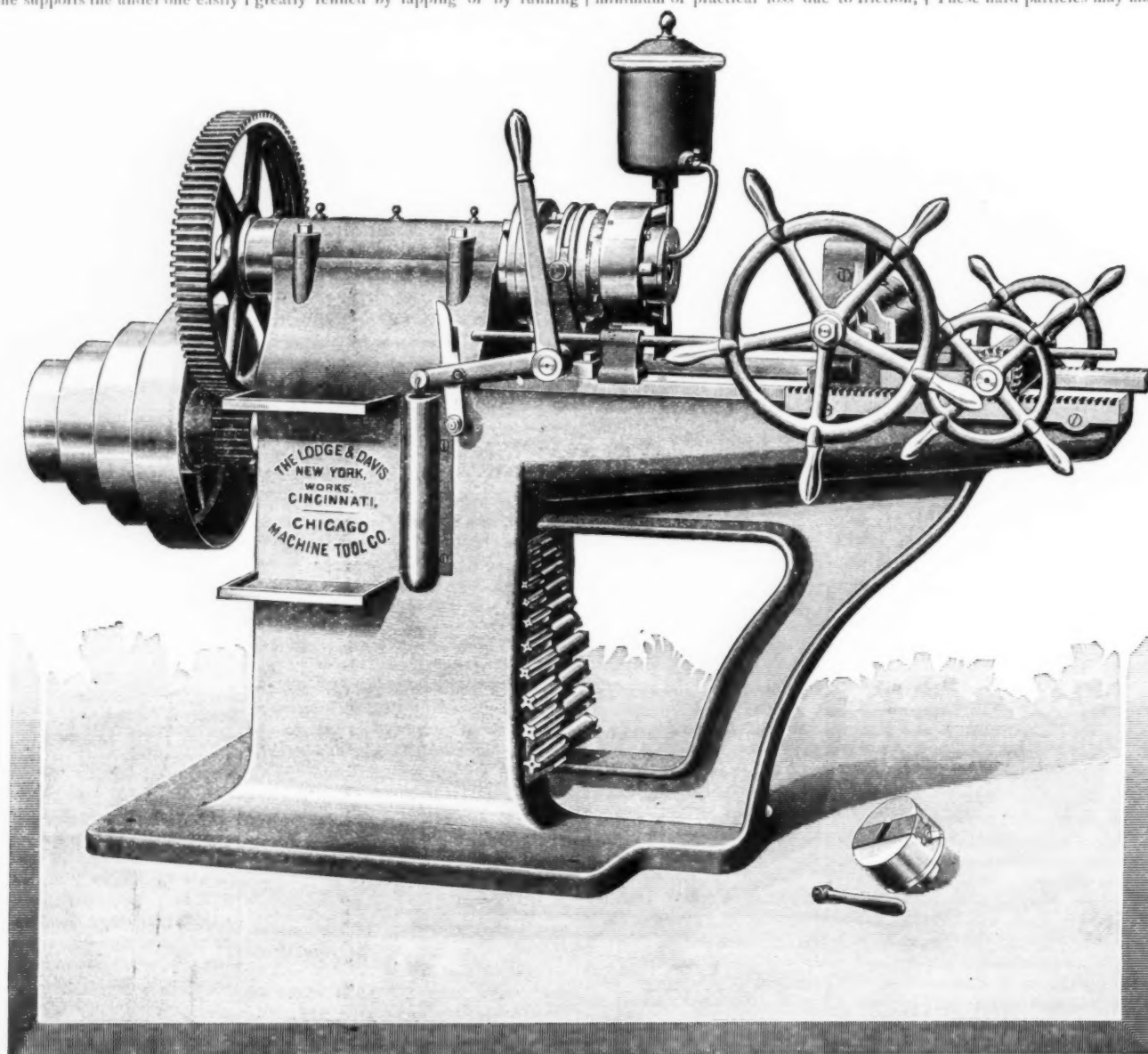
friction of motion between oak and oak in a direction parallel with the fibres was found to be, without lubrication, about 8-17; lubricated with tallow, about 1-10; with lard, about 1-15; between common wrought and cast iron is about 1-5; of iron on brass 1-7." The error that constantly creeps into the data of the friction of solids is that of the mechanical clutching of one contact surface by the other, and of the abrading action of the dust which accumulates between and cannot be eliminated from wearing surfaces. Thus, Morin found that the end grain of oak, however lubricated, caused much more friction (?) than the flat grain did, and he gives it as valuable data.

No fit, however machined, is at all perfect until it is "run" smooth. Even if the material be hardened steel, it must be greatly refined by lapping or by running

METALLIC dust in a bearing of metal is abradant, and while it is possible to exclude dust entering from the outside, that which wears off the bearings themselves is always present, and it is of the most dangerous kind, because it is like the surfaces it is in contact with and thus seeks to unite with them.

THE retardation due to irregularity of surfaces and that due to dust are both extra to friction, but they both must be served with power to drive them. The irregular new surfaces, however, will in time become fitted to each other, and the dust from wear will thus become much less, and then the long stretch of effective service between new too tight and old too loose bearings will set in. It is in this long term of service that a machine will run with its minimum of practical loss due to friction,

a handful of gravel or sand is sometimes thrown with beneficial results. I assume that this gravel does one, two or all of three things. It may grind both the axle and box smooth until the surface of one is so nearly parallel to the other that sufficient of the lubricant to support the load is able to remain between the parts and within the joint; for, while a few high spots on the axle will perforate the sheet of oil in the bearing and cut the metal of the box, large, smooth-moving and parallel surfaces will be effectually separated by the inability of the weight to overcome the viscosity of the contained oil. The gravel, again, may "charge" the axle and box by imbedding their surfaces with a material harder than either of the metals they are composed of, like a lap. These hard particles may make nearly con-



IMPROVED BOLT CUTTER AND NUT TAPPER.

by this means. The experience of every practical machinist complements these authorities by hundreds of instances wherein two surfaces of the same metal sliding together in contact have without heat united themselves together under heavy pressure and in the absence of a lubricant. Hence, it might be stated as a law that two bodies of the same metal in motion, the one in contact with the other, cannot be kept from attaching themselves together at points of greatest contact if they are perfectly clean and tightly fitted. It, however, is not denied that unlike metals may "cut" each other under a moving pressure, but the tendency cannot be nearly so great as in the case of two surfaces of soft iron, where it can be calculated on for a certainty.

MORIN in 1831: "The coefficient of the

the two parts together after they are ground by revolving wheels. The tools to refine wooden surfaces are notoriously not to be relied on to leave true planes; hence, on surfaces as elastic as oak the results may well be doubted as being correct. High spots on one piece of wood will imbed themselves into those on the other, the harder grain into the softer, and produce a resistance that certainly is not friction unless the resistance to filing be friction. Brass and steel, as stated, have high spots and low ones, and when the hills occupy the valleys, even though they are but microscopic in size, there is a mechanical effort needed to lift the one out of the other or to partially remove it. That is not friction. To this is due the heating of the boxes of a new tool and the frequent incidents of a similar character in new engines on ocean steamers and elsewhere.

if it be well cared for and properly lubricated.

THE subject of lubrication should be a very simple one after the subject of friction is properly understood. In view of the facts found by DeCoulumb, Tyndall and the multitude of practical men who have everyday experience in this matter, it is evident that two like materials in moving contact, one of which supports the other, must be separated by an unlike substance, or they will "cut" each other or unite together. In practice it is found that many kinds of unlike substances are satisfactory to prevent this adhesion of two bearing surfaces to each other. Into the boxes that cover railroad car axles, where the surfaces are rough and where the weight on the journals is so great as to press out the lubricant from contact spots and thus produce distinctive heat,

tinuous surfaces of material able to withstand the weight on an axle without being crushed or cutting itself; or the granular particles of gravel may become minute balls, cylinders or ovoid bodies, which roll in between the bearing surfaces and transform resistance to sliding into resistance to rolling, which is much less and produces but little heat.

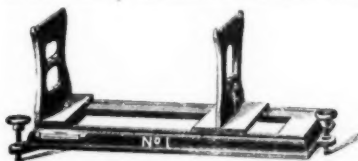
GRAPHITE, within certain limits, is one of the best of lubricants, it being nearly devoid of internal attraction, or rather of the adhesion of its particles together. Where the pressure is too great, however, it seems to lose its extreme slipperiness and fails to give the calculated results. My experiments lead me to believe that graphite has but little value where the pressure on the surfaces separated by it are sufficient to crush the quantity of the min-



eral present between them, and the absence of viscosity limits abruptly its usefulness just there. I have not tried steatite. It appears to have some of the lubricating qualities of graphite, but perhaps to an unpractically limited degree. Graphite suspended in oil or grease could obviously have no greater lubricating effect than the oil that carries it, for the oil would cover and encase the solid particles of the mineral, and they in moving in contact with each other would have to overcome the viscosity of the oil.

#### The Bowsher Balancing Way.

To a machinist or millwright one of the most tedious jobs, and one which generally results in dissatisfaction, is the balancing of a pulley for the transmission of power. Usually the trouble lies in the tools he employs, which generally consist of a couple of old rickety saw-horses that take from

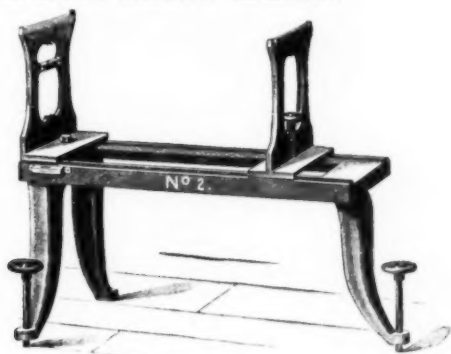


THE BOWSHER BALANCING WAY.

ten to twenty minutes to get in shape to balance a piece of work.

The new balancing way which is illustrated herewith is a device placed on the market by N. P. Bowsher, of South Bend, Ind., to overcome the difficulties usually met with in this class of work.

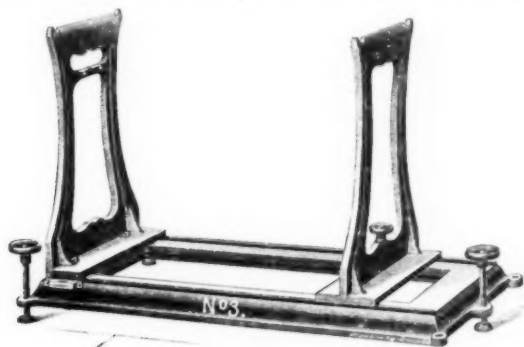
This tool consists of a frame or bed, with two planed ways, on which are mounted two standards. One of these standards is



THE BOWSHER BALANCING WAY.

fixed and the other is movable, the same as the tail-block of a lathe. The top edges of the standards are chilled and ground true and form the "ways" on which the work is rested while being tested for "balance."

The frame is supported by three legs or feet, consequently always stands firmly. One leg or foot is fixed, and a little longer



THE BOWSHER BALANCING WAY.

than the other two, which are adjustable by means of the screws shown. A spirit level is secured to the fixed standard and also one to the frame, so that both lateral and cross levels can be accurately determined. The way is used in balancing all kinds of work, such as cutter-heads, pulleys, armatures, etc., and is designed to supersede

the "horses" and similar devices at present used in all machine shops.

#### Improved Bolt Cutter and Nut Tapper.

The cut on preceding page illustrates an improved 4-die automatic bolt cutter, newly designed by the Lodge & Davis Machine Tool Co., of Cincinnati, Ohio. The machine is designed to cut bolts and tap nuts for same from  $\frac{3}{8}$  to  $1\frac{1}{2}$  inches. It is extra heavy, the entire frame being cast in one piece. The front of the machine on which the carriage slides is supported by a heavy brace, thus giving the greatest amount of stiffness.

The driving cone is of extra large diameter, and is provided with wide steps for belt. The gearing is proportioned five to one, and has an extra wide face.

The carriage has a feed of seventeen inches and a bearing of thirteen inches gibbed to the shears. The jaws of vice are arranged to take the full capacity of the machine without being changed. The jaws are also arranged to take several nuts at once, being a great saving in tapping. The head is positive in motion, and an automatic stop is provided for opening the dies in any position of the carriage. The dies have a large bearing in the barrel and ring, also having a fine adjustment. Every part is accessible from the outside, and the dies can be changed in less than a minute.

The machine is provided with a force pump, throwing a steady stream of oil into the tank over the head. The frame of the machine is used as a reservoir, into which the strained oil flows after being used by the machine.

#### The McNeil Charging Barrow.

The McNeil patent balanced charging barrow shown in the accompanying illustration, made by the Akron Tool Co., of Akron, Ohio, has given general satisfaction wherever tried, and is considered a marked improvement over the old style barrow, whether for blast furnace, railroad

tached to the sides of the axle frame, being arranged so that they can be readily removed if desired. The handles and frame are also attached to the axle frame, and a lug on the box engages a trigger on the handle frame, thus holding the two together. The frame is so constructed that when attached to the box it holds firmly, and when the box is unlatched in dumping its weight is so held by the frame as to prevent any possibility of falling into the hopper.

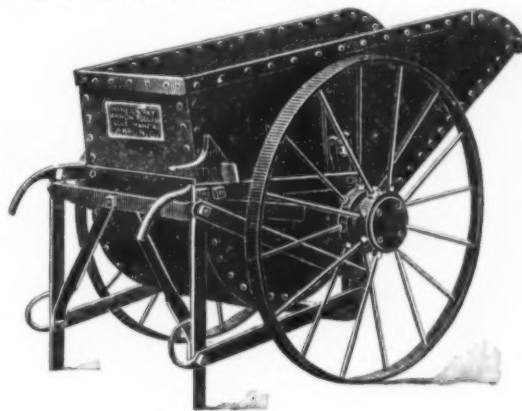
The use of a frame of this kind allows very large wheels to be used (about forty-two inches diameter), thus reducing the exertion required to start and run it. Another advantage is that this construction

the ore all to the height of the barrow top, and that the large wheels and the narrow gauge, together with the perfect balancing of the weight on the hands, made the work much easier.

The barrows we are using weigh about 570 pounds, which, together with the ore which they contain, makes a load of about 1,500 pounds, and one man takes the barrow with its load from the scale to the cage of the elevator with ease.

We use the wooden wheels, which have been in use for about eighteen months and are still in good condition, though it is necessary to caution the top-fillers against leaving the barrows too near the hopper so that the wheels might be scorched.

Ours is a charcoal blast furnace making about seventy tons of iron per day, and we would not be without the Akron barrows or something just as good, if there be any, for any consideration.



THE McNEIL CHARGING BARROW.

gives increased steadiness to the barrow and allows a much greater load to be carried without either too great exertion or danger of upsetting. When loaded the centre of gravity in the box is forward of the gudgeons which support it, and consequently in charging, when the latch is released the nose drops, discharging the load. The centre of gravity of the empty box is behind the bearings, so after dumping the box falls back into place, automatically latching itself. The wheels are strongly made, and roller bearings used instead of the ordinary parallel bearing.

These advantages over the old barrows are confirmed by various users. The

Similar testimony comes from other furnaces and also from railroads and gas works where these barrows have superseded the old style.

The Thomson-Houston Electric Co., of Boston, Mass., has filed a petition before Judge Miller, of Macon, Ga., declaring the Metropolitan Street Railway, of the latter city, indebted to them in the sum of \$35,199.19 and praying that a receiver be appointed. The case will be heard on November 19 at the Bibb county (Ga.) courthouse. The petition claims that the street railway company agreed to deliver to the Thomson-Houston Company its first



THE McNEIL CHARGING BARROW.

Union Rolling Mill Co., of Cleveland, Ohio, after using them for over two years, say: "We have twenty-four of them, and are very well satisfied with them." H. H. Noble, general manager of the Elk Rapids Iron Co., in a recent letter to the Akron Tool Co., says:

If you will refer to your correspondence you will find that we purchased of you some time ago four of these charging barrows, which we have had steadily in use since that time, to replace old homemade barrows, which were regular man-killers.

When we first received the new barrows it was hard to make the men understand that they were an improvement on the old barrows, but we stood right by them and showed the men that it was a great advantage to be able to tip down the front of the scoop and save the effort of throwing

mortgage 6 per cent. bonds, aggregating \$26,250, and also to pay off all claims of any character which might rest against the road; so that the amount due the Thomson-Houston would be the only liability. This the company has failed to do, and the petition states that it has not been able even to pay current running expenses or to meet judgments secured against it in the justices' courts.

MR. WILL W. BIERCE, general manager of the Alabama Compress & Storage Co., of Montgomery, Ala., writes: "I take this opportunity to state that I think the MANUFACTURERS' RECORD is the best paper of its kind."

## LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department, on pages 328 and 329.]

### Timber Wealth of Eastern Virginia and North Carolina.

NORFOLK, VA., November 15.

We have been lately giving the timber crop of that portion of Virginia and North Carolina directly tributary to Norfolk some little attention, and the magnitude of the same exceeds our highest estimates. We had supposed that the continuous and steady drafts made on the timber supply for more than 250 years had almost completely exhausted the supply, but in this we were greatly surprised and mistaken.

The idea generally expressed by our people is that the timber is all gone, and until one gets right down to the work and looks into the matter carefully and in detail, he is quite apt to assent to the universal verdict that the timber is all cut off.

We find that even in the counties lying close around Norfolk there is now standing, in the aggregate, a large quantity of pine timber, besides large quantities of cypress, juniper, oak and other varieties suited to manufacturing purposes. Take the gum tree for instance, for which until recently there has been but little use found—there is without doubt fully 100,000,000 feet now standing in Norfolk county and fully as much more in the county of Princess Anne. The neglected and rejected gum tree is now in demand for baskets, butter dishes, etc., and for such use commands a fair price in this city. It is also used largely in making barrels in which to send our immense quantities of vegetables to Northern markets.

It is claimed, or estimated, that in Eastern or Southeastern Virginia, including thirty counties, there is now standing 1,500,000,000 feet of pine and oak, besides large quantities of cypress, juniper and other varieties of timber suited for manufacturing purposes. This, when we consider the fact that this supply has been steadily drawn upon for fully 250 years, is a most remarkable showing.

Turning to our sister State, North Carolina, we find that the counties tributary to this seaport contain fully 5,000,000,000 feet of timber on the stump suited for manufacturing purposes. These figures are really not comprehended by the ordinary mind, as they are of such magnitude. The ordinary car carries about 10,000 feet of lumber. It would take 1,000,000 cars to carry off the lumber now standing on the stump in Southeast Virginia and Northeast North Carolina. If this timber crop is to be cut off and marketed during the next ten years, there must be about 300 carloads per day cut and taken out to market. Allowing twenty-five cars to a train, we see that loaded trains must move out at the rate of twelve trains per day—one train of twenty-five carloads of lumber must leave this timber field each two hours for a period of ten years in order to transport the timber crop in sight in only a small portion of the States of Virginia and North Carolina.

Then, again, let us consider for a few minutes this fact: Cypress and juniper will nearly double its growth in ten years' time. Pine will double its size in twenty years, so that when this crop is cut off there is a good share of another crop still on hand. The Great Dismal Swamp Co., owning several thousand acres, begins cutting on one side, and after working steadily several years, goes back to the point of beginning and cuts the ground over again. Pine is said to grow fully 6 per cent. per annum, which is legal rate of interest on money, and would alone make an investment in timber land profitable. Cypress and juniper grow still more rapidly.

That portion of the South bordering

on the Chesapeake bay and its tributaries and on the North Carolina sounds and their tributaries will never be stripped of its timber. The growth is so rapid and luxuriant as to defy anything except a concerted immense and prolonged effort to exterminate the timber. The timber once cut off from Pennsylvania, New York or any of the Eastern, Northern or Western States is off for at least 100 years, but in this section a very few years is sufficient to grow a respectable-looking forest.

A fair and proper regard for the laws of political economy would seem to dictate that a portion, at least, of this great lumber supply should be stopped here in Virginia and North Carolina and manufactured here. This view of the case is endorsed by the MANUFACTURERS' RECORD,

very little additional expense after the first cost. It can also be run to great advantage and profit to the owner of a circular mill, squaring up logs on the circular mill and reducing the timber to boards on the resaw.

The wheels are eighty inches in diameter, of solid metal, having steel spokes placed in the hub and rim in such a position as to insure the greatest amount of strength. Each wheel is fitted to its shaft in a superior manner and perfectly balanced; the lower wheel, being made thicker and heavier in the rim, is given thereby increased weight and momentum and is an improvement of more than ordinary value. Each wheel shaft is supported by an adjustable outside heavy bearing outside of each wheel.

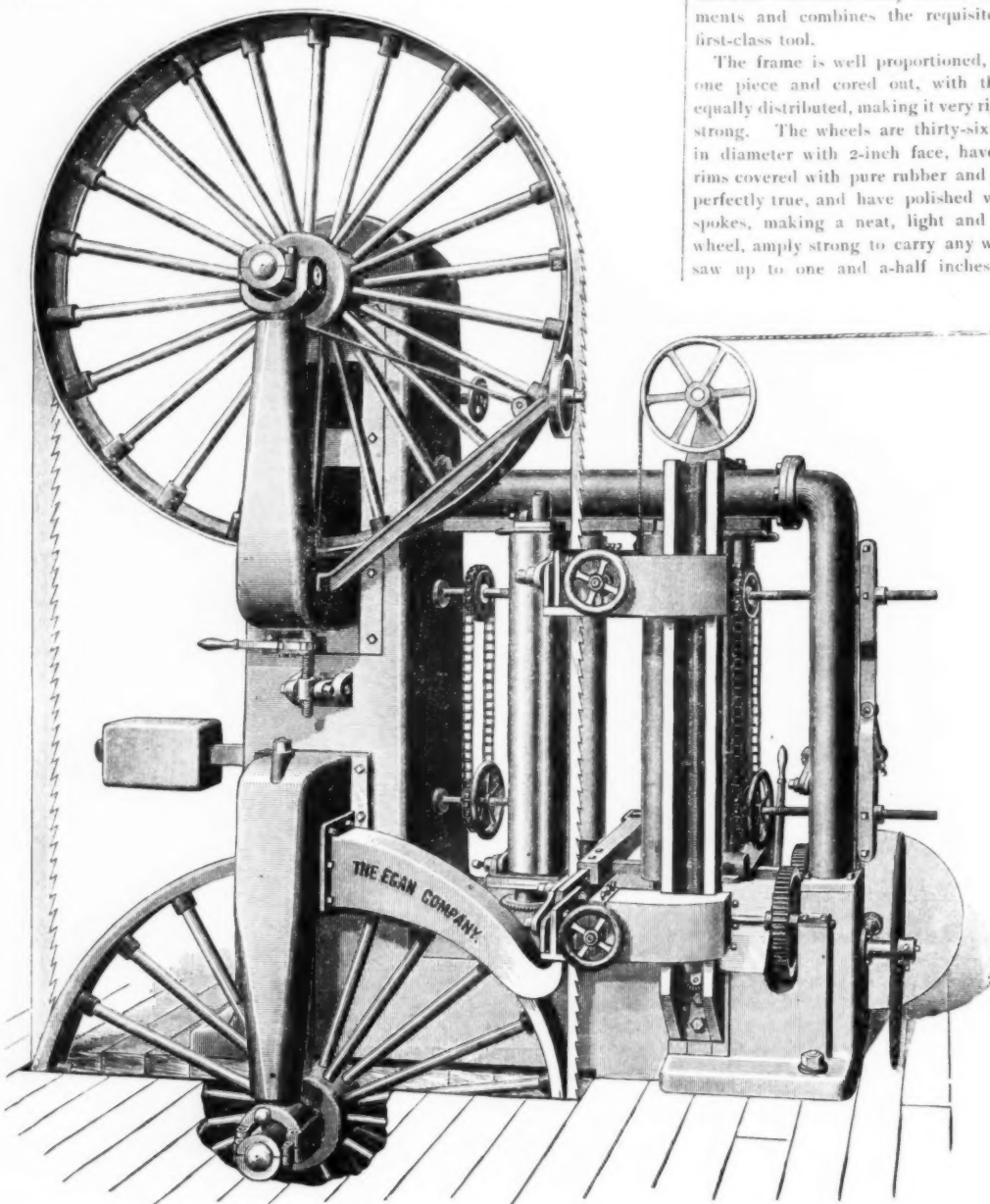
four inches, or will cut a thin sheet or board from the side of a timber twelve inches thick. When cutting narrow stock the entire width of cut area can be made by placing several pieces of stock between the rolls, one above the other. For saw mills, large planing mills or cutting heavy timbers it will be found the most profitable machine now made.

The makers furnish with each machine one eight-inch saw blade and the necessary wrenches, also a belt tightener.

### New 36-Inch Band-Sawing Machine.

The accompanying illustration shows a new patent band-sawing machine made by Greaves & Klusman, 181 and 183 West Second street, Cincinnati, Ohio. This machine embraces many recent improvements and combines the requisites of a first-class tool.

The frame is well proportioned, cast in one piece and cored out, with the iron equally distributed, making it very rigid and strong. The wheels are thirty-six inches in diameter with 2-inch face, have wood rims covered with pure rubber and ground perfectly true, and have polished wrought spokes, making a neat, light and strong wheel, amply strong to carry any width of saw up to one and a-half inches. The



NEW NO. 6 BAND RESAWING MACHINE.

and is in line with its numerous most excellent editorials, and we earnestly hope to see the day when Virginians and North Carolinians will be as intensely loyal to their manufacturing interests as to their political interests. In such case the timber crop will not all be sent north of Mason and Dixon's line to be converted into the finished articles for Southern consumption.

A. JEFFERS.

### New Band Resawing Machine.

This machine, designated as No. 6 by the makers, the Egan Co., of Cincinnati, Ohio, is an improved band resaw machine of great capacity, easy to operate and not liable to get out of order. Placed in a saw mill, and in connection with a band mill, it will double the output, and with

The feed is very powerful, consisting of two pairs of feed rolls of large diameter and driven by powerful gearing, each pair of feed rolls operated independent of the other and supported at the top and bottom by large screws, making it impossible for the rolls to get out of line with the saw when sawing warped or irregular stock. The graduating feed is at all times under the control of the operator, enabling him to increase or diminish it by moving one lever.

The patent roller guides are of new design, very effective in operation, and the upper guide is connected to an upright bracket moving up and down on the same and counteracted by a weight of suitable size.

It will resaw stock up to forty-eight inches wide, and to the centre of twenty-

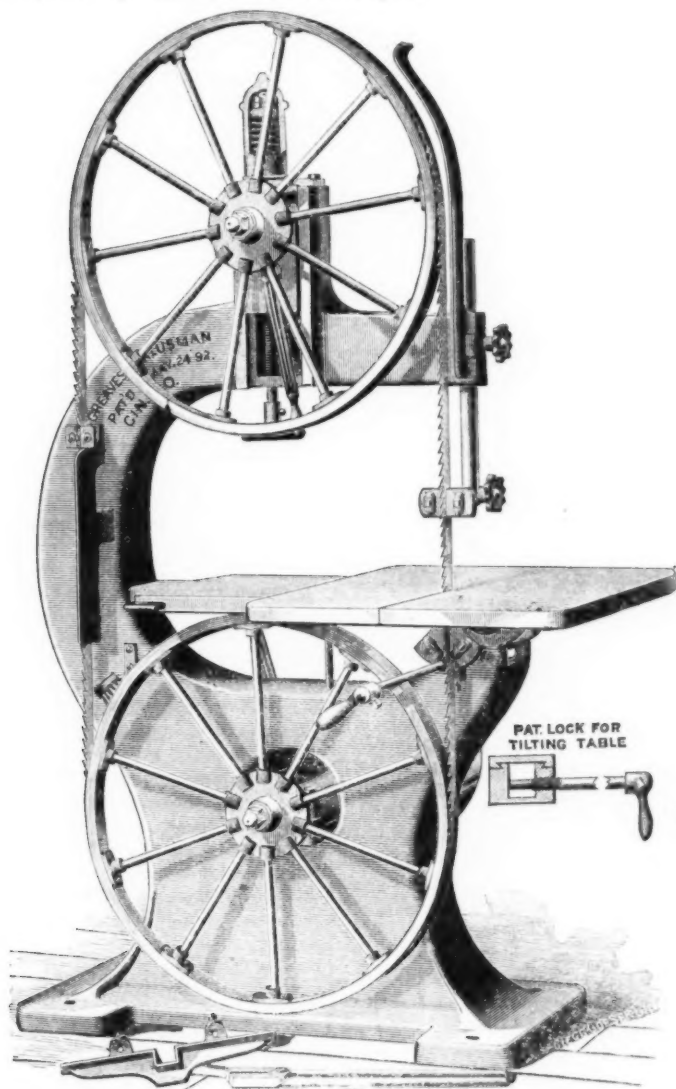
upper and lower shafts revolve in self-oiling connected double boxes lined with genuine Babbitt metal. The lower box is bolted to the frame, with necessary adjustments to take up wear. The upper wheel is adjusted vertically by means of a hand wheel. There is a spring to maintain uniform tension and compensate for the expansion and contraction of saw. The strain may be increased or decreased according to the density of the work. The upper wheel can be angled to lead the saw in any desired path from the front of the machine by means of a lever, as shown in cut. The table is of iron, planed perfectly true, and may be tilted for bevel or conical sawing up to 45°.

The patent tilting device or lock is new and ingenious, with many points of advan-



tage over the old style. It consists of two parts, dovetailed and perfectly turned and fitted, together with a lever for tightening, and has no habbitted bearings. It is quick-acting and of great convenience to the operator, no wrenches being required. It is operated by means of the lever, as

The saw will take fifteen inches under the guide. Each machine is furnished with one saw blade ready for use, and brazing tongs and vise. Every machine is put under belt and carefully tested on actual work, and warranted first-class in every respect.



NEW PATENT 36-INCH BAND SAWING MACHINE.

shown in cut, and the table can be quickly and accurately adjusted to any desired angle while the operator remains standing and without changing his working position. The table, tilting as it does on dovetailed slides, remains rigid at all times, and when set to any certain angle does not move from the set angle while being tightened or locked, as is the case with the old

#### Self-Feeding Gang Ripping Machine.

The machine shown in the accompanying illustration has been designed to rip lumber for flooring, ceiling, siding and similar purposes, and by increased weight, strength, feeding power and other valuable features avoids the defects often found in machines of this class. The capacity is unusually

best advantage. The floor stand is made with levers on each side and has an indexed plate on top graduated to quarters of an inch, by means of which the lever controlling the movements of saw and gauge can be set instantly at the proper width.

The gauge is long and of such construction that the board will keep well up to it and thereby do perfect work. The end box is removable and allows the instantaneous changing of saws without removing a bolt or screw or disturbing the arbor. The three feed rolls are all driven, the upper roll being fluted and running under a heavy, solid binder roll, making the most powerful feeding machine now built. The feed works have two changes of feed.

This is the only machine that has a foot lever under control of the operator, allowing him to instantly raise the upper roll and release the board and also set the roll to the proper thickness. All other machines use a cord and pulley to lift the roll off and also require the changing and adjusting of set screws for proper thickness of board, etc.

Two stationary and two movable collars and four saws are furnished with each machine, allowing the operator to keep a set of sharp saws always on hand, and as the changes are quickly made, sharp saws will be used, insuring better and faster work.

This machine saws up to twenty-six inches wide and four inches thick; has saws fourteen inches diameter; pulley eight inches diameter, eight and one-half inches face, and should run 2,600 revolutions per minute. J. S. Graham & Co., of Rochester, N. Y., are the makers.

#### Southern Lumber Notes.

THE Reliance Lumber Co.'s mill at Beaumont is still idle and improvements going on. The company have sufficient yard stock on hand to keep business moving, and will not likely commence sawing until the 1st of January.

THE saw mill at Jolly Bay, Fla., was burned down on the 5th inst. and 150,000 feet of lumber destroyed. Mr. Strickland, the owner, estimates his loss at \$12,800, with no insurance. He will probably rebuild at once.

THE Altamaha (Ga.) Cypress Mills have shut down to put in hollow blast grate bars for burning green and wet wood, steam niggers for turning logs in the carriage and other machinery.

C. E. HERRICK, superintendent of the Crystal River Cedar Works, near Ocala, Fla., reports their stock of logs accumulating, and the company have on hand over \$60,000 worth of cedar logs.

THE dryhouse and planing mill of the

estimates the loss at \$3,500, with an insurance of \$1,550.

HACKBURN & WILLETS'S saw mill, in Craven county, was burned a few days ago, and their loss is \$5,000, with no insurance.

THE planing mill and a quantity of lumber belonging to the Donald Lumber & Manufacturing Co., at the foot of Canal street, Mobile, Ala., was destroyed by fire on Tuesday last. The value of the lumber destroyed was about \$1,500, and the entire loss about \$3,000, all covered by insurance in the city agencies. The loss will not affect the business of the company, and they will rebuild at once.

THE Kanawha City (W. Va.) Lumber Co. has decided to dissolve, and J. T. Barker has been selected as trustee to settle its affairs.

THE Kyle Lumber Co., of Gadsden, Ala., intends developing a large tract of timber land in Calhoun county, and in order to facilitate operations will extend its railroad from Oak Grove.

A LARGE number of cars especially for the lumber traffic in West Virginia is being added to the West Virginia & Pittsburgh Railroad.

THE steamship Jno. G. Christopher, for New York from Pensacola, Fla., last week, carried 60,000 feet of lumber.

THE amount of timber and lumber shipped from Darien, Ga., last month was 6,236,797 feet.

THE Kimball mill at Apalachicola, Fla., commenced operations on Monday the 7th inst.

THE Boston & Albany Railroad Co. has purchased the entire mill and railroad property of the Quitman (Ga.) Lumber Co., assuming a \$60,000 mortgage under the terms of the sale. The operation of the saw mill will be continued right along.

A LARGE shipment of walnut logs to Antwerp was made recently from Galveston, Texas.

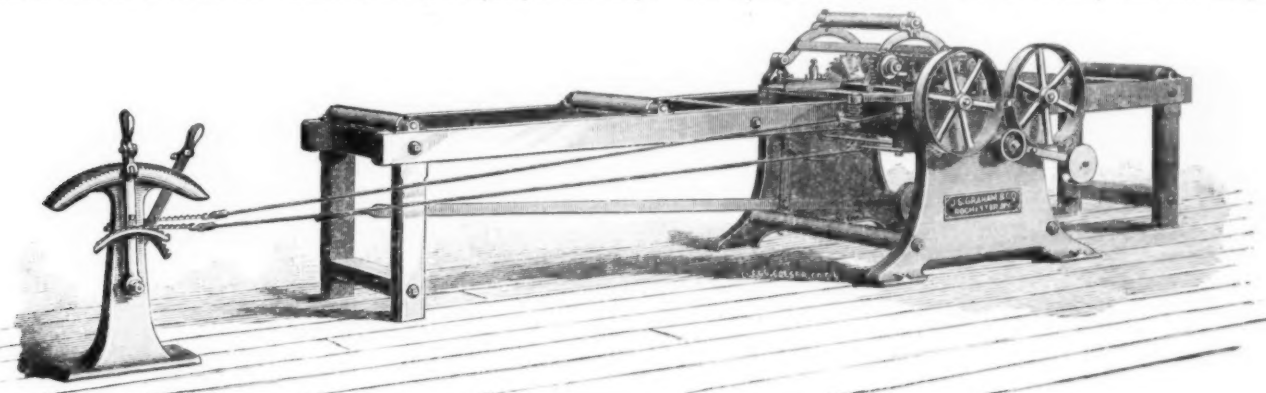
MESSRS. MARCEY & LEEDS intend making some additions to their extensive saw and planing mill plant at Belington, W. Va.

A FINE plant for cutting hardwood has been established near Welch, W. Va., by Denman & Ritter, and they are about to commence shipping.

GEORGE W. LAMBERT is at work removing the timber from an extensive tract of land near Welch, in McDowell county, W. Va.

JAMES BELL, of Vivian, W. Va., has closed down his Welch mill and is now turning out dressed lumber for local trade.

THE Horton Land & Lumber Co., of Pennsylvania, have bought a large tract of



IMPROVED SELF-FEEDING GANG RIPPING MACHINE.

style tilting device.

The guides are of the most improved construction and can be adjusted in either direction. The belt shifter and all adjustments are in close reach of the operator, and can be made without changing his position. It is so arranged that the machine may be belted from the top or below, or from either side, as may be desired.

large. It is capable of ripping 50,000 feet or more of stock lumber per day all ready for a flooring machine or other purposes.

The arbor carries two saws—one stationary, the other movable; the gauge is also movable. The operator stands near the iron floor stand and has complete control of the movable gauge and shifting saw, allowing each board to be sawed to the

Yellow Pine Lumber Co. at Mobile, Ala., was burned on Thursday, the 10th inst. The fire broke out in the superheated apartments of the dry-kiln and burned so rapidly that before assistance could arrive the fire had spread to the planing mill. A large quantity of planed lumber, with an engine, three planers and cut-off saws, were destroyed. Mr. Jordan, the manager,

land having on it about 10,000,000 feet of excellent hardwood near Barfield, on the Donaphan branch of the St. Louis & Iron Mountain Railroad, and are preparing to put up one of the largest mills in Southern Missouri. It will be a saw mill and dry-kiln of the latest and the most improved machinery and patterns. The engine will be 300 horse-power, and will carry 12-inch

hands. The logs will be hauled by a locomotive. Stephen Oyster will be the manager and superintendent.

THE Texas Tram & Lumber Co., of Beaumont, is busily making shipments of ties on the order recently obtained from the British-American Railroad in Mexico. The order calls for 20,000,000 feet, and it is expected to complete it before January 1.

THE extensive milling plant of the Reliance Lumber Co., at Beaumont, Texas, was shut down on the 1st inst. for repairs. The mill will be thoroughly overhauled and several new machines added to its equipment, and operations will resume by January 1. The mill turned out over 23,000,000 feet of lumber during the past year. A meeting of the directors of the company will be held on November 22.

THE Harrison properties in Morgan county, W. Va., have been purchased by C. E. Jones. A tract of 60,000 acres of pine timber lands is included, and Mr. Jones proposes clearing same at once and erecting several portable mills to saw it.

MR. J. M. MYERS has started up his new mill at Greenway, Ark.

MESSRS. P. L. CONQUEST & Co., of Virginia, have purchased recently the entire railroad and timber interests of R. K. Hopkins, of Brunswick, Ga., in Camden county. The sale is said to have been closed at \$38,000.

THE steamer Cherokee left Jacksonville, Fla., last week for New York with freight, including 200,000 feet of lumber, 100,000 cross-ties and 7,000 bundles of shingles.

THE Nantahala Lumber & Manufacturing Co., has been organized at Jarretts, N. C., with the following officers, all of La Fayette, Ind.: D. H. Lowman, president; George H. ent, and William F. Mertz, secretary and Hubbard, vice-president and superintendent-treasurer. The company has an extensive tract of timber on the Nantahala river which it will float to Jarretts for cutting. Its plant's capacity daily is 25,000 feet.

THE Reeves Lumber Co., of Black Rock, Ark., has purchased the Cleveland mill at Eleven Points and will remove it to Black Rock.

THE Gardner & Lacey Lumber Co., of Georgetown, S. C., recently made a large shipment of cypress lumber to a Newark (N. J.) firm.

THE Goddard Lumber Co. is making extensive improvements to its plant that will greatly increase its capacity.

CAPT. HENRY RINGER has purchased a fine tract of timber land in Webster county, W. Va., and intends developing same at once. He will erect an extensive saw-milling plant immediately.

THE Kimball Lumber Co., of Apalachicola, Fla., shipped 6,769,000 feet of lumber during the past year; the Cypress Lumber Co., 6,708,000 feet; the Franklin County Lumber Co., 13,150,000 feet, and D. M. Monroe & Co., 7,195,000 feet.

MR. FRANK B. WILLIAMS, of Patterson, La., the well-known cypress manufacturer, has obtained contract to deliver a large quantity of cypress timber and lumber to be used in building coal barges to ply on the Mississippi and Ohio rivers.

THE L'Anguille Lumber Co., of Marianna, Ark., which has been lying idle for several weeks, will start up in a few days. They cut hardwood, and on account of shortage of cars had accumulated too much stock on hand.

MR. FRANK HENDERSON, of Pendleton county, Va., has purchased a tract of 889 acres of cherry timber land on Cheat river for \$11,000 and proposes clearing same at once.

THE Henderson Steel & Manufacturing Co. has completed the work of reconstructing its steel plant at Birmingham and will resume operations within ten days.

## LUMBER MARKET REVIEWS.

### New York.

OFFICE OF MANUFACTURERS' RECORD,  
No. 126 Liberty Street,  
NEW YORK, November 15.

The excitement attending the late election is subsiding and things are resuming their normal condition. So far as I know, notwithstanding Grover Cleveland has been elected, and the party of tariff reform have gained the ascendancy, there are no lumber plants to be sold around this neighborhood for less than 100 cents on the dollar. In fact, we are of the opinion that our dealers are rather looking forward to a more prosperous year next year than they have had for several past. It is not probable that the good times which are expected will get here much ahead of January 1, but it is reasonable to expect that purchases that were withheld till after the election may now be made, and there will be improved condition of the market.

We have heard that the yellow pine men are trying to get up a scheme to control the prices, at retail, of yellow pine in this market, somewhat on the lines of the present spruce agreement. We are very sure that all who have the interests of the lumber trade at heart will heartily hope that they may be successful in their endeavor. As we have stated, we are firmly of the opinion that the only hope for yellow pine lies in organization. The prices rule about as follows:

Building orders, 12 in. and under.....	\$19 50	20 00
14 in. and up.....	20 00	21 00
Yard orders, random.....	17 00	18 00
Ship stock, 40 ft. average.....	22 00	23 00
Heart face siding, 1 and 1 1/4 in.....	18 00	19 00
1-inch wide boards.....	22 00	—
1 1/4 and 1 1/2-inch wide boards.....	23 00	—
Kiln-dried sap.....	15 00	16 00
Rift-sawn flooring, rough cargo lot.....	36 00	38 00
tongue and grooved, in carload lots.....	40 00	—

Speaking of organization, we cannot but notice a recent action taken by the Philadelphia Lumber Exchange, which is so much in the line of protection to the manufacturers that I am sure they will find it of lively interest. This association, or rather exchange, has resolved to address the following circular to manufacturers and shippers of lumber in certain portions of the United States and Canada:

It has come to the knowledge of the members of the Lumbermen's Exchange of the city of Philadelphia that certain fraudulent dealers in lumber are corresponding with manufacturers and shippers of lumber for the purpose of buying their stock, and, when bought, failing in almost every case to make payment for same.

As a means of protection to you we would recommend that if the party be unknown to you, that before shipping to this market you first consult with a reputable mercantile agency or bank or some responsible dealer you may know, or with this exchange, as to the reputation of the party soliciting the shipment.

If you have at any time heretofore been defrauded by any of these dealers, we would thank you for full particulars regarding the transaction.

We address this in good faith as a protection to you, and also to protect the good name of the responsible dealers in lumber in this city.

There is an improved condition in the poplar market, and choice stocks are bringing better prices than heretofore. Good firsts and seconds are now bringing about \$31.00 for inch, \$32.00 for inch and a quarter and inch and a-half, \$33.00 for two-inch and \$34.00 for thicker. Saps fetch \$25.50 to \$26.50, and common \$22.00 to \$23.00.

There is no particular change in the quartered-oak market. It is still in very much favor; nevertheless, purchasers confine their trades to immediate wants. There seems to be no disposition to stock up ahead of present requirements.

1x6 inch and up.....	\$19 00	50 00
Thicker.....	50 00	53 00
Common.....	35 00	38 00

Plain oak is in rather slow demand, except for thick lumber, and in this the quality should be good and stocks fairly seasoned. The fact is that the shipping of plain oak has been a little in excess of demand; this has had a bearish tendency on the market.

1x8 inch and up.....	\$35 00	36 00
1 1/4 and 1 1/2 inch.....	36 00	38 00
2 inch.....	37 00	39 00
Export oak.....	32 00	34 00

Rejects and culls in ash are not very much sought after at present, but for good widths and manufacture dry stock in firsts and seconds is in very good demand and is not easily found at present.

1 inch.....	\$35 00	37 00
1 1/4, 3/2 and 2 inch.....	37 00	40 00
2 1/2, 3 and 4 inch.....	38 00	41 00
Common.....	22 00	24 00
Balusters.....	22 00	26 00

Walnut for export is in good demand; for domestic trade, in fair demand, and rejects find a fair sale. There is also an improved inquiry for walnut culls.

There is no change in cherry; it is a good wood, and readily sells.

One feature of the market which we think will interest our Southern friends is the fact that elm is going to be quite a popular wood in this vicinity, and we think is liable to grow in favor as a substitute for oak, although it is readily distinguishable to a lumberman from oak. Yet, unscrupulous retail furniture dealers have no hesitation in selling elm as first-class oak. This we know from instances which have come under our personal observation.

### Baltimore.

OFFICE MANUFACTURERS' RECORD,  
BALTIMORE, November 17.

A decidedly better market has been the rule during the past week in lumber and timber circles, and with favorable weather the movement in the various grades has been of a better volume of business. The general demand is fully up to the average for this period of the season, and there is a better through business reported by commission houses. As to receipts of Virginia and North Carolina pine, they are ample, and prices are firm, with the general demand fairly active. Flooring grades are selling well, but rough boards are slow in moving. There is a fair inquiry for small joists of certain sizes. There is quite an improvement in air-dried stock, especially for flooring grades, which are firm with a hardening tendency. The movement in white pine is steady at firm figures, and, while no sales of large lots are reported, there is a fair volume of business transacted in this branch of the lumber industry. Cypress is moving very freely, and there is a good market for all choice lots at steady prices. There is an excellent demand for cypress shingles, but not so quick as a month ago; values, however, show a good deal of firmness, and stocks are fully ample for all requirements. The business in hardwoods is not large, and the demand at the moment rather limited but steady at quoted figures. A better inquiry is expected when manufacturers of furniture and others are ready to purchase for future trade in their respective lines. The planing mill industry is reported in good shape, and manufacturers are all fully employed, having a fair supply of orders at rather better figures than usual. Box factories also are doing a good business at remunerative prices. The following list represents the prices current at this date:

VIRGINIA AND NORTH CAROLINA PINE.		
5-4x10 and 12 No. 2, kiln dried.....	\$17 00	17 25
4-4x10 and 12 No. 1.....	19 75	20 25
4-4 narrow edge, No. 1, kiln dried.....	17 25	17 75
4-4 wide edge.....	22 50	—
6-4x8, 10 and 12.....	22 25	23 50
4-4 No. 1 edge flooring, air dried.....	15 50	16 50
4-4 No. 2 edge flooring.....	12 50	13 00
4-4 No. 1 12-inch stock.....	17 00	17 50
4-4 No. 2.....	13 50	14 50
4-4 edge box or rough wide.....	8 50	9 50
4-4 " " (ordin'y widths).....	8 50	9 00
4-4 " " (narrow).....	8 00	8 50
4-4x12.....	10 50	11 00
1/2 narrow edge.....	7 00	7 50
1/2 all widths.....	8 00	8 50
1/2 10x16 wide.....	8 00	9 00
Small joists, 2 1/2-12, 14 and 16 long.....	8 00	9 00
Large joists, 3-16 long and up.....	9 50	10 50
Scantling, 2x3-16.....	9 50	10 50
" 2x4-16, 18 and 20.....	9 50	10 50
" 3x4-16, 18 and 20.....	9 50	10 50
" 6-4x12-16.....	10 50	11 00
" 6-4x10-16.....	9 00	9 50
" 8-4x10-16.....	9 00	9 50

SOUTHERN PINE.		
Siding and edge boards.....	14 50	15 00
Heart face boards.....	22 50	23 50
WHITE PINE.		
1st and 2d clear, 4-4.....	48 00	52 00
" 5-4, 6-4 and 8-4.....	48 50	52 50
3d clear, 4-4, 5-4, 6-4 and 8-4.....	43 00	44 00

Good edge culls.....	14 00	15 00
Good stock.....	17 00	18 00
White pine, No. 1, 4-foot headed pickets.....	13 50	14 50
4-4 selected edge.....	39 00	43 50
6x8-4 selected edge, box out.....	39 00	45 00

CYPRESS.		
4-4x6, 16 feet, clear.....	24 00	24 50
4-4x6, 16 feet, fencing.....	12 75	13 75
4-4 rough edge.....	10 00	10 50
4-4 edge, Nos. 1 and 2.....	19 00	21 50

HARDWOODS.		
Walnut.		
3/4, Nos. 1 and 2.....	75 00	100 00
4-4, Nos. 1 and 2.....	90 00	100 00
5-4, 6-4 and 8-4.....	95 00	110 00
Nos. 2 1/2, 3 and 4.....	125 00	—
Newell stuff, clear of heart.....	125 00	—
Culls.....	30 00	35 00

Oak.		
Cabinet, white and red, plain sawed and good 1 and 2, 8 in. and up, 12 to 16 feet long, 4-4.....	35 00	40 00
5-4 to 8-4.....	35 00	40 00
Quartered white, 1 and 2 quality, all figured, 6 in. and up wide, 4-4.....	50 00	53 00
Culls.....	10 00	15 00

Poplar.		
Nos. 1 and 2, 5/4.....	21 50	23 50
4-4.....	24 00	25 50
Nos. 5, 6 and 8-4.....	27 00	30 00
In yellow pine cargoes, log run stock.....	12 50	16 50
Culls.....	12 50	14 50

SHINGLES.		
Cypress, No. 1 hearts, sawed, 6x20.....	7 50	7 75
No. 1 saps, sawed, 6x20.....	6 00	6 25
No. 1 hearts, shaved, 6x20.....	6 50	7 00
No. 1 saps, shaved, 6x20.....	5 25	5 50

LATHS.		
White pine.....	2 70	2 75
Spruce.....	2 35	2 40
Cypress.....	2 15	2 20

### Norfolk.

[From our own Correspondent.]

NORFOLK, VA., November 16.

There seems to be the usual activity in the lumber industry here, and under the very favorable weather which prevails the volume of business tends to increase in every department. From all points in the interior of the State the reports are in most cases favorable, and there is an abundance of logs, while the mills are crowded with orders, and have in some instances both day and night forces engaged. During the past week there has been no change in the market for kiln-dried North Carolina pine; the same constant and urgent demand exists, and prices throughout the list are very firm. The shipments by rail and water continue very large, and there are a number of vessels now loading and many on passage for this port. Receipts of air-dried lumber continue liberal, and for choice grades there is a good demand at fair prices. Edge stuff is dull, particularly in box grades. There is a good inquiry for flooring grades of stock widths, which command good prices. Cypress lumber and shingles are in very fair demand, with a limited supply and prices firm, especially for the better grades. Dressed stock is selling well, and all the planing mills are busy and report trade as good at fair prices for the output. The receipts of lumber for the month of October, as compiled by the Chamber of Commerce, is as follows: Lumber 39,339,589 feet, logs 13,316,086 feet, staves 1,222,322, shingles 5,555,150 and railroad ties 33,810. The following table represents the prices current at this date:

Kiln-dried North Carolina pine lumber f. o. b. at this port is quoted as follows:

5-4 rift No. 1.....	\$27 50	—
5-4 rift No. 2.....	16 00	—
5-4x10 No. 1.....	20 00	—
5-4x12 No. 1.....	20 50	—
5-4x10 No. 2.....	15 00	—
5-4x12 No. 2.....	16 00	—
5-4 edge No. 1.....	17 50	—
5-4 edge No. 2.....	13 50	—
4-4 rift No. 1.....	25 00	—
4-4 rift No. 2.....	15 00	—
4-4x10 No. 1.....	18 50	—
4-4x12 No. 1.....	19 50	—
4-4x10 No. 2.....	15 00	—
4-4x12 No. 2.....	15 00	—
4-4 edge No. 3.....	9 50	—
5-4 edge No. 3.....	10 50	—
4-4x8, 10 and 12 culls or box.....	9 00	10 50
4-4x5-4 edge, cull or box.....	8 50	—

VIRGINIA PINE.		
4-4 flooring boards (dry and clear).....	13 50	14 50
4-4 flooring boards (rough).....	7 50	8 50
SHINGLES.		
No. 1 hearts, split, car lots.....	6 50	7 75
No. 2 hearts, split, car lots.....	5 50	6 25
No. 1 saps, split, car lots.....	4 75	5 50
No. 2 saps, split, car lots.....	4 25	4 75
No. 1 sawed hearts, car lots.....	6 50	7 50
No. 2 sawed hearts, car lots.....	5 00	5 50

WOOD.		
Hard, per cord.....	2 75	3 00
Pine, per cord.....	2 75	3 00

STAVES.		
Red oak hoghead, prime.....	38 00	—
Red oak hoghead, culls.....	22 00	—
White oak hoghead, prime.....	50 00	—
White oak hoghead, culls.....	28 00	30 00
White oak heading, prime.....	50 00	—
White oak heading, culls.....	26 00	—



**Charleston.**

[From our own Correspondent.]

CHARLESTON, S. C., November 16.

There is a better feeling in the lumber market at this port, and considerable activity prevails both here and at milling points in the interior of the State. The demand for lumber is fair and values continue about steady, the shipments during the week being about 480,000 superficial feet, all to New York. All the mills along Santee river and those near Georgetown are reported as sawing up to their full capacity and turning out their orders with prompt dispatch. The quotations current at the close of the week are as follows: Merchantable lumber steady at \$14.00 to \$16.00 for city sawed, \$12.00 to \$14.00 for railroad. Square and round timber is quoted at \$9.00 to \$13.00 for railroad, \$8.00 to \$11.00 for raft. Dock timber is held at \$4.50 to \$6.50, and shipping \$8.50 to \$10.50. The manufacture of cypress shingles is becoming very extensive, and all the mills are turning out large orders for good grades. Stocks on hand are not large, and prices range very steady with a good demand from Northern ports. In lumber freights there is no change, and rates to New York are quoted at \$5.00 and Philadelphia \$4.75. Late contracts for lumber to Providence were made on private terms. Crossties to New York, thirty-six feet, are quoted at thirteen cents each.

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1891, TO NOVEMBER 11, 1892.

Exported to	1891-'92. Feet.	1892-'93. Feet.
New York.....	6,055,156	6,441,192
Boston.....	1,027,000	1,675,000
Philadelphia.....	440,000	534,000
Baltimore.....	307,000	998,000
Other United States ports.....	7,829,156	9,648,192
Great Britain.....		
Palermo.....		
France.....	440,759	
West Indies.....		468,300
South America.....		
Nova Scotia.....		
Other foreign ports.....	440,759	468,300
Total foreign.....	440,759	468,300
Grand total.....	8,269,915	10,116,192

**Savannah.**

[From our own Correspondent.]

SAVANNAH, GA., November 16.

Business here since the election has been quiet, but has commenced again to revive, as during the excitement of last week little else but politics was thought of. With regard to lumber and timber matters there is everything connected with this industry to encourage those engaged in it, and the outlook is highly promising from every point of view. There is a good demand from Northern cities and a fair improvement in the West Indies and South America trade, several cargoes having gone out this week for those countries. Our harbor improvements are getting in better shape and this is increasing our lumber trade, as we have now a good channel out to sea. Captain Carter, of the United States engineers, says in his letter to the president of the Board of Trade: "Perhaps as clear an idea of the available depth of water in the harbor as can be obtained in any other manner may be gathered from the fact that about two months ago a vessel drawing 21.3 feet went from the wharves of the city of Savannah to the sea. On spring tides vessels drawing considerably more than this can with ease be taken out, while on neap tides, with westerly winds, the draft would have to be somewhat reduced."

At present our shipments show up very creditably, being 2,470,287 feet of lumber for the week under review, besides 834 cedar logs, 332 cases of cedar, 18,069 cross-ties and 203,750 shingles. The total shipments, both foreign and coastwise, since September 1, 1892, to date were as follows: 25,324,719 superficial feet of lumber, 1,667 M shingles, 358,200 cross-ties, 1,354 cases of cedar, 1,420 cedar logs, 69,200 staves and

1,230 bundles of laths. The list of values holds very steady, easy sizes being quoted \$11.50 to \$13.00, ordinary \$12.00 to \$16.50, flooring boards \$14.50 to \$22.00 and shipstuffs \$15.50 to \$25.00. In freights there is a liberal offering of tonnage, and rates are unchanged. Sailors are quoted at \$4.25 to \$5.00 for a range including Baltimore and Portland, Me. Steamers are held at \$7.00 for New York, \$8.00 for Philadelphia and Boston and \$6.50 for Baltimore.

**Brunswick.**

[From our own Correspondent.]

BRUNSWICK, GA., November 15.

Everything connected with the lumber trade of this port shows remarkable activity at present, and this industry will exhibit a good record for the current year. The demand from South America is improving, and we hope to get the trade from that section back to the old figures, when 40,000,000 feet were annually sent to that country. Advances from the interior represent business as good, and mills are all fully employed with orders. The demand for railroad ties and timber is also much better, and several vessels are now about to load for Northern ports. In shipping circles business is very lively. The British brig Carrick was chartered last week to load lumber here at \$16.00 for Bahia Blanca, South America. The Benjamin Courtney sailed for Boston this week with a full cargo of lumber. The schooners Charles B. Coulomb and the Raymond T. Maull both left for Philadelphia with full cargoes of lumber.

**Pensacola.**

[From our own Correspondent.]

PENSACOLA, FLA., November 16.

As to the lumber and timber industry of this port there is only one opinion prevalent, and that is that it is fast coming to the front as the principal and most prominent one in this industry of all the Gulf ports. The record of this year will be a good one, and in volume of business will surpass that of last year. The further improvement of our harbor will be a strong factor in increasing the shipping facilities and inviting trade to the city. The contract for deepening the harbor has been let to Rittenhouse Moore, of Mobile, who is to begin the work not later than January next. The contract requires that the work shall be begun on the inner bar, the dredging to be done to a depth of twenty-four feet at low water. The width of the channel is to be as great as the money available will permit of and not to exceed 300 feet. After the work on the inner bar has been completed work on the outer bar will be commenced. It is said that at the contract price it will be possible to remove about 120,000 cubic yards with the money available. Although the presidential election has occupied the people to a great degree, the lumber business has not been neglected. The demand is very active at the moment, but mostly for lumber, and there are a number of vessels here and on passage chartered for the West Indies, Mexico, South America and the United Kingdom and Continent. The bark Star of India sailed on Saturday for London with 25,000 superficial feet of lumber and 718,000 superficial feet of sawed timber. The demand for shingles is very spirited, and orders are numerous, keeping the mills busy to supply them with dispatch. There is no change in the freight market. Pitch pine freights continue dull and rates steady on a basis of £4 7s. 6d. to £4 10s. for large vessels and £4 12s. 6d. to £4 15s. for handy-sized tonnage to the United Kingdom or Continent. For South America the quotations are \$13.00 to Montevideo or Buenos Ayres and \$15.00 to Rio Janeiro.

**Mobile.**

[From our own Correspondent.]

MOBILE, ALA., November 16.

The week under review has been rather quiet in lumber and timber circles, politics

absorbing everything connected with that industry. The situation, however, is considered very promising, and the usual activity at this period of the season is quite notable. Advances from Europe are similar to those received a week ago, and prices are, if anything, a shade firmer. Transactions during the past week have been mostly in lumber, the timber trade being quiet with no shipments to report. Hewn timber placed upon the market will bring about 13½ to 14 cents for choice lots; some sales reported at the latter figure. Sawn timber is dull at 11½ to 12 cents per cubic foot on a basis of 40-foot average. The demand for lumber is very fair and comes mostly from the West Indies and South America. There is a fair inquiry for railroad timber for Mexico, and some large contracts are now being filled for that country. The shipments of lumber during the week were as follows: Schooner John F. Kranz, for Carthagena, with 434,350 feet; schooner Jerome B. Look, for Kingston, Jamaica, with 276,419 feet, and brig Estella, for Havana, with 240,000 feet; total, 950,769 feet. The shipments since September 1, 1892, were 10,147,726 feet, against 8,459,252 feet for the same period in 1891. There is a good inquiry for cypress shingles for export, and the various mills in the interior are all fully engaged with plenty of orders. As to the local city trade the prospect is very promising, and the number of buildings in progress and improvements in public works has created an active demand for certain grades of lumber. Prices throughout the general list are very firm, and stocks are in some cases barely sufficient for the brisk inquiry prevailing. In lumber freights rates are unchanged: Coastwise \$6.00 to \$6.50, West Indies \$6.00 to \$7.00 and to Rio Janeiro \$18.00 nominal. Timber to the United Kingdom is quoted at 28s. to 30s. per load for hewn, and sawn timber at £4 10s. to £4 15s. per standard.

**Memphis.**

[From our own Correspondent.]

MEMPHIS, TENN., November 15.

The continued fine weather continues the good business of the local yards and mills. The result of the election has had a most surprising and immediate effect on the general business of the whole country, and its influence is most especially felt in the lumber trade.

Yours is not a political journal, and I am not a political correspondent, but this is an extraordinary occasion. There never was a time when such a weight and cloud was lifted from a people or an entire section of country as has been lifted off from the South by the election of the 8th. The effect was almost instantaneous, and business has taken an impetus that will carry our dealers and manufacturers over the hard times of the fall and winter, confidence has been restored, and already new and increased orders are coming in.

There are a number of new buildings in contemplation, or that have been placed under contract within the past day or two. The shipping trade is also improving, though that was in as good shape as it well could be. The associate trades are all doing well, full of orders and at fully remunerative prices.

J. W. Thompson, president of the Nettleton (Miss.) Hardwood Lumber Co., was in the office last week on his way back from Indiana. He says of their business that it is very good indeed, better than at any time before during the year. Their output is all contracted to a Goshen (Ind.) concern, by whom most of it is used for the export trade. Their output is about two-thirds white oak, 40 per cent. being quartered, with some ash and a little poplar. They have now in their yard as elegant a lot of lumber as can be found anywhere, about 1,000,000 feet, 80 per cent. of which is special grade of oak.

Prices are unchanged, as follows:

BLACK WALNUT.	
1st and 2d, 1, 1½ and 2-inch.....	\$65 00 70 00
Common.....	35 50 40 00
Counter tops.....	90 00 110 00
ASH.	
1st and 2d clear, 1 to 4-inch.....	24 00 30 00
Common.....	12 00 14 00
CYPRESS.	
1-inch, 1st and 2d clear.....	22 00 24 00
1½, 1½ and 2-inch.....	24 00 26 00
Fencing 1x6, 16 feet.....	15 00 16 00
POPLAR.	
1-inch, 1st and 2d clear.....	24 00 25 00
1½ and 2 inch, 1st and 2d clear.....	26 00 28 00
Common boards.....	14 00 16 00
Dressed, 1, 1½ & 2-in., 1st & 2d clear.....	28 00 30 00
Common dressed, 1-inch.....	16 00 17 50
Squares.....	22 50 26 00
COTTONWOOD.	
1 to 3-inch mill run, culls out.....	9 00 12 00
Squares.....	12 50 16 00
RED GUM.	
1st and 2d.....	16 00 20 00
Common and culls.....	8 00 10 00
OAK.	
1 to 4-inch, 1st and 2d.....	24 00 26 00
Common, 1 and 2-inch.....	13 00 15 00
Quarter oak, 1-inch, 1st and 2d.....	30 00 32 00
Quarter oak, 1½-inch and up.....	34 00 36 00
White & higher.....	
YELLOW PINE.	
1st and 2d, 1½ and 2-inch.....	18 00 20 00
Dressed.....	25 00 30 00
Flooring, 5 and 6 d and m.....	17 50 20 00
Flooring, 3 and 4 d and m.....	17 50 20 00
2d flooring.....	15 00 17 50
Heart step lumber.....	27 50 30 00
Ceiling, 1st and 2d, ¾, ¾ and ¾.....	17 50 20 00
Ceiling, 1st and 2d, ¾ and ¾.....	16 00 18 00
Common 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.....	12 50 15 00
TIMBER (LOGS).	
Poplar.....	6 00 10 00
Cypress.....	6 00 9 00
Cottonwood.....	3 00 4 00
Gum.....	3 00 4 50
Oak.....	6 00 12 00
Ash.....	8 00 13 00
Black walnut.....	15 00 50 00
SHINGLES.	
No. 1 heart cypress, 16-inch.....	3 00 4 00
No. 1 sap, 16-inch.....	2 50 3 00
LATH.	
Poplar.....	2 00 2 75
Cypress.....	— 00 2 50
Pine.....	— 00 2 00

**Beaumont.**

BEAUMONT, TEXAS, November 14.

Notwithstanding the political excitement during the past week, the lumber trade at this point and throughout the district has held its own remarkably well. We expect now to settle down to business after one of the most exciting State campaigns in our history, and it is the general belief that the lumber industry will not suffer by the late political results. There is a good general demand for lumber and railroad timber, and during the week orders from the State and Nebraska, Kansas and other points have been coming in freely. The Beaumont Journal, in its weekly review, says: "Although the past week has been devoted largely to politics, business has not been entirely overlooked, as evidenced by the steady receipt of orders from Texas dealers and from points in other States. \* \* \* Manufacturers generally have a good supply of special bills, and several inquiries for large bills are out among the mills. No effort having been made recently to sell dealers stocks, prices are steady and sales are made strictly on list figures." A very important feature is the spirited demand for railroad bill stuff both here and at all points in the milling section. There has also been placed with mills in East Texas and on Louisiana line a very large amount of lumber for export. The mills at Orange, Texas, and Lake Charles, La., are all running on full time and business is reported quite active. The Bradley-Ramsey Lumber Co. report good progress and not an excessive stock on hand, their yards not being overcrowded with from 6,000,000 to 7,000,000 feet on hand. This company has built a new office and made other necessary improvements, while everything now is in first-class shape. The Reliance Lumber Co. will resume operations about the first of January next. The Perkins & Miller Lumber Co., at Westlake, La., are making some extensive improvements to their plant, and when completed they will have a very complete property. Among the various departments of the lumber industry the shingle trade here is occupying the attention of millmen and the demand is rapidly increasing. Stocks at the moment are not sufficient for the brisk demand prevailing, and prices hold very firm for all grades.





## COAL AND COKE.

## Cumberland Coal Shipments.

The shipments of coal from the Cumberland region for the week ended November 12 and for the year to that date have been as follows:

Companies.	Week. Tons.	Year. Tons.
Borden Mining Co.....	7,406.17	215,908.12
Consolidation Coal Co....	18,338.15	793,986.00
Union Mine.....	4,335.10	159,602.01
George's Creek Coal & Iron Co.....	6,535.09	256,483.19
Swanton Mining Co.....	5,162.00	5,162.00
Potomac Coal Co.....	2,335.05	121,951.00
Franklin Cons. Coal Co....	1,354.06	61,140.02
Piedmont Cumb. Coal Co.	537.11	10,658.12
Barton & George's Creek Valley Coal Co.....	4,081.13	174,279.11
Big Vein Coal Co.....	1,303.08	56,760.00
Anthony Mining Co.....	253.13	8,648.17
W. Va. C. & P. (Elk Gar- den Mines).....	6,686.01	309,265.13
Atlantic & George's Crk Coal Co.....	981.03	36,062.12
Davis Coal & Coke Co....	1,618.00	92,327.00
Thomas Mine.....	2,183.04	95,638.01
Davis and Elkin Mine...	1,382.00	64,456.07
Cumb. Coal Co. (Douglas Mine).....	1,083.00	56,156.00
Elk Garden Big Vein Mining Co.....	855.00	33,885.14
Hampshire Mine.....	721.07	17,562.03
Big Vein Coal Co.....	3,338.02	3,338.02
American Coal Co.....	7,385.14	337,940.13
Maryland Coal Co.....	6,302.15	242,196.16
New Central Coal Co.....	3,999.02	175,863.01
Total.....	79,881.13	3,240,355.03
Previously.....	3,240,355.03	
Aggregate.....	3,320,236.16	3,320,236.16

## COKE SHIPMENTS OVER WEST VIRGINIA CENTRAL &amp; PITTSBURG RAILWAY.

Companies.	Week. Tons.	Year. Tons.
Davis Coal & Coke Co....	1,284.00	45,498.00
Thomas Coke Ovens.....	146.05	7,654.01
Cumberland Coal Co....	286.00	15,182.00
Total for week.....	1,716.05	
Previously for year.....	66,617.16	
Year to date.....	68,334.01	68,334.01
Same period last year...	69,321.09	

## The Thurber (Texas) Coal Mines.

A correspondent of the *Colliery Engineer*, writing from Thurber, Texas, gives the following information about the coal mines at that point:

The mines here described are located on the Texas & Pacific Railroad eighty miles west of Fort Worth, and are operated by the Texas & Pacific Coal Co. Col. R. D. Hunter is president and general manager, and Mr. W. K. Gordon, superintendent, and under their able management the growth of the mines has been truly phenomenal. About three and one-half years ago this company purchased several thousand acres of land containing a superior seam of coal, at which time but one shaft was in operation. It was known as No. 1, a rickety, ramshackle affair with a daily output of 200 tons.

Since then four additional shafts have been sunk—Nos. 2, 3, 4 and 5. Work in these has been advanced as rapidly as men, money and brains could do it, making it at present the coal-mining centre of Texas.

No. 1, as previously stated, was in operation when the present company took possession. The machinery was of a cheap and old-fashioned pattern and the average output 200 tons per day. No. 1 was abandoned about one year ago.

No. 2 is equipped for a capacity of 500 tons per day, and its average output is 400 tons daily. The coal varies from twenty-two inches to twenty-six inches in thickness, with four inches to six inches of soft fire-clay underlying it. The method of working is the Morris system of Longwall, and the price paid for mining the coal is \$1.15 per ton. This shaft is in charge of Mr. D. C. Heatherington, formerly of McAlister, Indian Territory, where he for several years successfully managed No. 7 and the ill-fated No. 11.

No. 3 shaft began operations about eighteen months ago, and at present its daily output averages 300 tons. The coal and also the manner of working are the same as in No. 2. Mr. Adam Southern is

in charge, and the prospects for the future are very bright.

No. 4, which reached the coal nine months ago, has a splendid machinery plant, and indications are that it will prove a very profitable mine. It is in charge of Mr. James Mathews.

No. 5, the last, but by no means least, deserves especial mention as having not only the finest plant in Texas, but in the whole Southwest. It reached the coal three months ago, and has been fitted out according to Colonel Hunter's own ideas. It has the Russel & Parsons self-dumping cages, electric bells and speaking tubes and an elegant machinery plant. Mr. William M. Lewis is in charge, and has reason to be proud of the Jesse pit.

The average depth of the mines is ninety feet, and they are free from water and gas. Each one is ventilated by a Crawford & McCrimmon fan of fifteen feet diameter, and each shaft has a good traveling way.

Thurber, the mining town, has 2,500 inhabitants and good churches and schools. The locality is a healthy one, and Col. R. D. Hunter has spent thousands of dollars in procuring a pure water supply for the town. The general office of the company is located at Fort Worth.

## Coal and Coke Notes.

COAL wharves are now under construction at Houston, Texas, by Henry D. Wilson, and he has purchased vessels for transporting coal.

THE Patterson Company, Pineville, Ky., James Purvis, manager, is arranging to have its mines and coke ovens ready to resume production in a short time.

MR. CASPER WORKMAN intends opening a fuel coal mine at Sand Spring, near Frostburg, Md.

A FINE vein of coal has been found on 200 acres of land situated between Winchester and Capon Springs, Va. S. B. Corbett recently purchased the property.

THE Cordova Coal Co. will hold a meeting at its office in Cordova, Ala., on December 7th to consider, amongst other things, plans for improving its property. T. H. Watson is secretary.

## The Peacock Mine Cars.

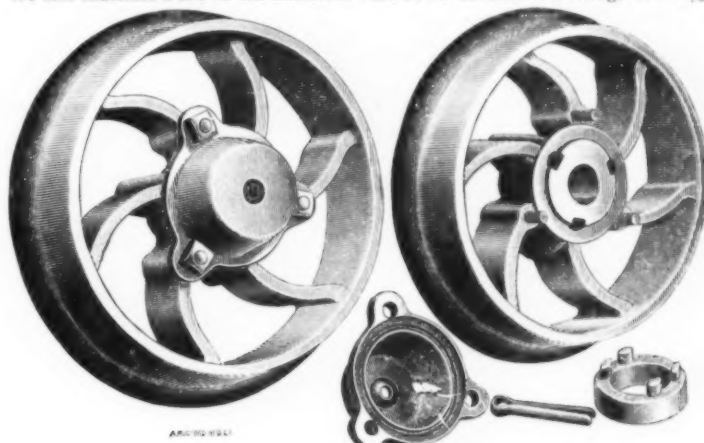
The Peacock Iron Works, of Selma, Ala., of which George Peacock is proprietor, has been in operation since 1865, and the cars turned out from this establishment are widely in use and well known throughout the South. The illustrations accompanying show a few of the numerous styles of cars built in these works. The automatic self-oiling tram-car wheels used on these cars constitute one of their chief features and are a specialty with this concern. An experience of many years in this line of business has resulted in the production of a simple and very efficient self-oiler for all purposes where the low grades of black oil are used, the construction being shown in the accompanying illustrations. There is no possibility of the oil escaping. The cap is fitted with a close-fitting flange so as to resist any side jar or strain, and also prevents the rubber washer from getting out of place.

These wheels are made of the best charcoal pig iron, no old material being used in their manufacture. They are chilled three-eighths of an inch deep on the tread, and the makers claim that they will outlast any other wheel made. They are bored to a standard size, and the axles are turned true to size. When fitted together they run as easy and smooth as a new loose pulley on a shaft. They are furnished either with or without axles and in all sizes used on mining cars, from eight to twenty inches. When fitted on axles they use a patent safety washer, which prevents any wearing of the cotter, thus preventing wheels from flying off when in use. Thousands of these wheels are now in use

in eighteen different States, giving entire satisfaction. This concern also makes plate wheels and spoke wheels of all sizes, pressed tight on round axles for any gauge, with babbitted boxes and bearings inside or outside of the wheels.

We also illustrate a few of the numerous

Car C is of the same shape but smaller, for use where a very small vein is worked, the capacity being 1,200 pounds. The car is six feet long inside, fourteen inches deep, twenty-nine inches wide on bottom and forty-two inches at top. The wheels are 10 or 12-inch self-oiling, with 1½ or

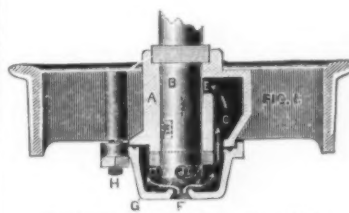


PEACOCK SELF-OILING MINE CAR WHEEL.

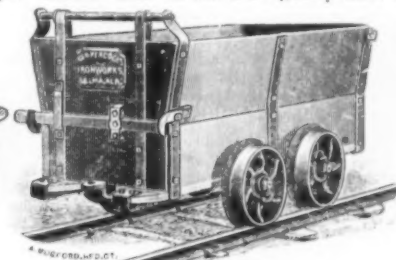
styles of mine cars built by this works. The iron work is furnished where it is deemed more desirable to build the wood work at the mines, but they also build them complete when wanted, with hand-wheel, foot or lever power breaks, double or single.

1½-inch axles, either round or square. The gauge is three feet.

Car D is a rotary dump, which can be dumped in any direction. It is intended for iron ore mining, slate quarries or contractors' use. It will hold 4,000 pounds of



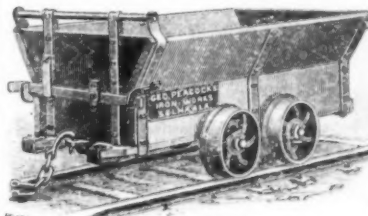
PEACOCK SELF-OILING MINE CAR WHEEL.



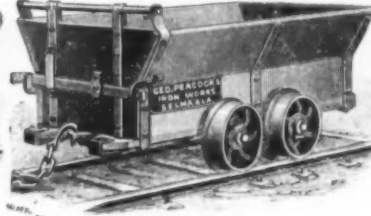
CAR "A."

Car A is a tippable dump car for iron ore or limestone, with capacity of from 3,500 to 4,000 pounds. The inside measurements are as follows: Length six and a-half feet, depth twenty-eight inches, width at bottom twenty-eight inches, width at top thirty-

iron ore. The car is six feet long inside, four feet three inches wide at the front end, four feet eight inches wide at the back end and eighteen inches deep. Sixteen-inch chilled plate wheels are used and 2½-inch round axles, with babbitted journal boxes.



CAR "B."



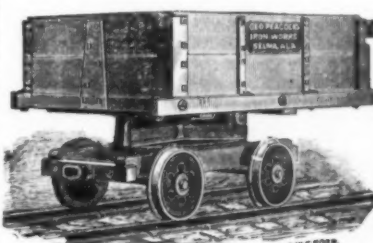
CAR "C."

four inches. The bottom is 2-inch oak plank, and the sides are 1½-inch oak. The wheels are 14 or 16-inch heavy self-oiling or plate, with 2½-inch square or round axles, 3-foot gauge.

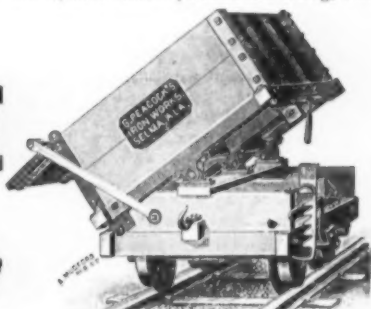
The gauge is three feet.

Car B is a 2,000-pound tippable dump car

Car E is a side dump car for ore, etc., having a capacity of 22½ cubic feet. The inside length is five feet, width thirty-six inches, depth eighteen inches. The wheels are 14-inch chilled plate or self-oiling, with



CAR "D."



CAR "E."

for coal, six feet long inside, twenty-two inches deep, twenty-eight inches wide at the bottom and forty-one inches wide at top. The bottom is 2-inch oak plank and the sides 1½-inch. The wheels are 12 or 14-inch self-oiling, and the axles are 1½-inch round or square. The gauge is three feet.

2-inch axles, 3-foot gauge. This car can be made to dump on either side, or both.

In addition to these and other styles of cars this concern also makes tipples, frogs, turnouts, couplings and everything connected with mine cars and roads. A full line of wheels and axles is carried in stock.

# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

\* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

# In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

## ALABAMA.

Anniston—Tannery.—Joseph Embry will erect a tannery.

Anniston—Tannery.—Lloyd & Tate will build a tannery.

Birmingham—Publishing Company.—The Alabama Directors Co. has been organized for publishing purposes, with Leonard Lippman as president. Its capital stock is \$10,000.

Fort Payne—Steel Works.—J. A. Wilder, Chas. Turner and J. K. Lanning have incorporated the Alabama Steel Works with a capital stock of \$225,000.

Mobile—Planing Mill.—The Yellow Pine Lumber Co. will doubtless rebuild its planing mill, reported in this issue as burned.

Mobile—Planing Mill.—The Donald Lumber & Manufacturing Co. will rebuild its planing mill, reported in this issue as burned.

## ARKANSAS.

Eagle Mills.—Electric light Plant.—The Eagle Lumber Co. has put an electric-light plant in its mill.

Fort Smith—Cornmeal Mill.—Abbott & Co. have put in a complete cornmeal mill, purchased from the Barnard & Leas Manufacturing Co., of Moline, Ill.

Little Rock.—The Reiman Stock Co. has been incorporated with a capital stock of \$5,000.

Morrilton—Electric-light, Water Works, etc.—The American Electric Co., of Philadelphia, Pa., Fred Balcom, general manager, has under consideration the erection of an electric-light plant, water works and other industries at Morrilton.

Pine Bluff—Car Shops.—The St. Louis & Southwestern Railway Co. (office, St. Louis, Mo.) will build car shops in Pine Bluff.

Sulphur Springs—Flour Mill.—The Meyer Milling Co. has put in a complete flour mill, purchased from the Barnard & Leas Manufacturing Co., of Moline, Ill.

Van Buren—Cotton Compress.—The Van Buren Compress & Manufacturing Co., lately reported as erecting a cotton compress, has been incorporated with a capital stock of \$50,000.

## FLORIDA.

Bagdad—Saw Mill.—The Simpson Company Island Mill will put in new machinery.

Pensacola—Cigar Factory.—M. A. Martinez will establish a cigar factory in Pensacola to employ twenty-five hands.

Pensacola—Fertilizer Works.—The Goulding Fertilizer Co. will rebuild its recently burned plant.

St. Augustine—Machine Shop.—Philip Prioleau has built a machine shop.

Tampa—Cigar Factory.—Julius Ellinger & Co., of Key West, have decided to remove their cigar factory to Tampa. They will build a \$16,000 building for their accommodation.

## GEORGIA.

Atlanta—Coal Company.—The Corona Coal Co. has been incorporated and organized with a capital stock of \$50,000. L. B. Musgrove is president; R. W. Long, vice-president and general manager, and E. G. Storey, secretary and treasurer.

Ben Hill—Pyrites Mines.—The Georgia Pyrites Mining Co. has purchased additional machinery for its mines in order to increase output.

Columbus—Ice Plant.—The Columbus Ice & Refrigerating Co. will improve its plant.

Rome—Water Works.—The city will construct a new \$500,000 water works system. Two reservoirs of 2,000,000 and 3,000,000 gallons capacity, respectively, will be built. Superintendent Wagner can give information.

Sandersville—Cotton Mill.—A cotton factory may be built. S. G. Lang can give information.

Savannah—Brewery.—The P. H. Wolters Brewing Co. has organized under its charter, electing George Meyer president and treasurer; Jacob Bigler, vice-president, and Emil J. Rall, secretary. The company has recently built a new brewery and will at once operate same.

Savannah—Brick Works.—B. L. Owens, B. H. Taylor and H. S. Turner have incorporated the Hardeeville Brick Co. to manufacture brick, etc. Their capital stock is \$25,000.

## KENTUCKY.

Covington.—E. F. Abbott, G. M. Abbott and B. K. Morton have incorporated the United Express & Transportation Co. with a capital stock of \$50,000. They propose to transact a general express business in the United States, Mexico and Canada.

Covington—Land Company.—The Fort Thomas Land Co. has been incorporated with a capital stock of \$500,000.

Covington—Carl Hais, S. Fritz and Frank Schlosser have incorporated the Land, Stone & Ice Co. with a capital stock of \$50,000.

Fordsville—Stave Company.—John M. Johnson, William H. Lyons and John J. McHenry have incorporated the Hardwood Stave Co. with a capital stock of \$20,000.

Glasgow—Electric-light Plant.—The Electric Construction Co., of New York, may build an electric-light plant in Glasgow.

Louisville—Whiskey Distillery.—Rosenfeld Bros. & Co., of Chicago, Ill., have purchased distillery No. 5 from Lemmon & Meschendorf for \$82,500, and will improve and operate it.

Louisville—Stone Quarries.—Samuel Chandler, J. J. Schafer and Richard A. Young have incorporated the Chandler-Schafer Co. to operate and sell stone quarries. Their capital stock is \$75,000.

Louisville—Mercantile Company.—E. W. Bedinger, Jr., C. E. Fullenwider, Robert A. Locke, J. L. Miller and Arthur Goose have incorporated the Kentucky Mercantile Co. with a capital stock of \$60,000.

Louisville—Printing Company.—Daniel Smith and Wade Shelman have incorporated the Franklin Printing Co. for printing purposes. Their capital stock is \$25,000, authorized.

## LOUISIANA.

Alexandria—Saw Mill.—Levin's saw mill, recently burned, will be rebuilt.

Baton Rouge—Hardware Company.—The Fuqua Hardware Co. has been incorporated to deal in hardware with a capital stock of \$25,000. Robert A. Hart is president; J. E. Blouin, vice-president, and Henry Fuqua, manager.

Cottonports—Central Sugar Refinery.—Endeavors are being made for the organization of a stock company to erect the sugar refinery mentioned last week. Laundry L. Bordelon can give information.

Lecompte—Saw and Shingle Mill.—The Lecompte Lumber & Shingle Co. will rebuild its recently burned shingle mill and also erect a saw mill.

## MARYLAND.

Aberdeen—Can Factory.—The Aberdeen Can Co. has been organized with a capital stock of \$30,000 for the purpose of erecting a can factory. The directors are C. W. Baker, W. H. Bayless, Chris Smith and others. George Walker, president and general manager.

Baltimore—Bleach and Dye Works.—The Maryland Bleach and Dye Works will put in new boiler and engine and otherwise improve its plant, doubling its capacity.

Baltimore—Cotton Factory.—The Baltimore Waste Co. will put in considerable new machinery.

Baltimore—Electric-light Plant.—J. Frank Morrison is interested in a project to organize the General Electric Co. Proposed capital is \$2,000,000. A reorganization of the Maryland Electric Co. would be secured and it would be consolidated with the new concern to build a plant in Baltimore.

Baltimore—Real Estate.—The Leeds Land Co. has been incorporated to deal in real estate and prepare lumber. Its capital stock is \$100,000.

Brunswick—Mercantile Company.—The L. A. Montague Co. has been incorporated (under West Virginia laws) with a capital stock of \$20,000.

Curtis Bay (P. O. Baltimore)—Tobacco Factory.—The E. T. Pilkinton Co., of Richmond, Va., will erect a three-story brick tobacco factory at Curtis Bay to employ 200 hands. L. H. Neudecker, of Baltimore, is the company's president.

Hagerstown—Carpet and Matting Factory.—It is said that a \$10,000 to \$25,000 stock company has been formed by Albert Munsen to establish a carpet and matting factory.

Laurel—Electric-light Plant.—The Ries Electric Co., of Baltimore, will erect the electric-light plant reported last week.

Oxford—Electric-light Plant.—The Bowman's Bazar Electric Light & Power Co. will erect an electric-light plant. Contract for building has been let.

Washington, D. C.—Publishing Company.—The Washington News Publishing Co. has been incorporated to publish the Evening News. Jules Guthridge is president; T. J. Alvord, Jr., vice-president, and John G. Slater, secretary and treasurer; capital stock \$150,000.

Washington, D. C.—Steam Laundry.—Anton Lerch will erect a steam laundry.

## MISSISSIPPI.

Gainesville—Box Factory.—John Peterman intends to build a box factory.

Gloster—Cannery.—The Gloster Canning & Preserving Co. has been incorporated to can fruit and vegetables with a capital stock of \$5,000.

Macon—Machine and Iron Works.—The Macon Machine and Iron Works, recently burned, will probably be rebuilt.

Rolling Fork—Saw Mill and Gin.—Cartwright & Roberts will at once rebuild their saw mill and cotton gin reported in this issue as burned.

## NORTH CAROLINA.

Bessemer City—Iron Mining, etc.—The Bessemer Mining Co. has been incorporated to mine iron and other ores, quarry rock, etc. Its capital stock is \$650,000.

Catawba—Gold Mine.—Messrs. Molesworth & Keating have purchased a gold mine from M. Ruffy near Catawba, and are developing it.

Catawba—Corn Mill.—John P. Moore will erect a corn mill.

Cedar Falls—Cotton Mill.—The Cedar Falls Manufacturing Co. has lately put new machinery in its cotton mill.

Charlotte—Cannery.—A fruit cannery will probably be located in Charlotte. H. G. Hall, of Blacksburg, S. C., can give information.

Charlotte—Jug Factory.—M. J. Ritchie will establish a jug factory at River Bend, near Charlotte.

Eagle Mills—Cotton Mill.—Morrison, Gaither & Co. have lately put new spindles in their cotton mill, and may in the near future put in more machinery.

Edenton—Knitting Mill.—A knitting mill may be built. Theodore Ralph can give information.

Franklinville—Cotton Mill.—The Randolph Manufacturing Co. has lately put additional machinery in its cotton mill.

Greensboro—Hosiery Mill.—The Oak Hill Hosiery Mill, lately reported as incorporated, is an established plant, and is now putting in new machinery.

Jamestown—Cotton Mill.—The Oakdale Manufacturing Co. may put new machinery in its cotton mill.

Jarretts—Saw Mill.—The Nantahala Lumber & Manufacturing Co. has been organized to operate a saw mill.

Lexington—Cotton Mill.—The Wenonah Cotton Mills have lately added new machinery.

New Berne—Box Factory, Saw Mill, etc.—Hackburn & Willett are rebuilding their saw mill, box factory and fertilizer works recently burned.

Old Fort—Shoe Factory.—H. Westerman, formerly of Wilmington, has erected a shoe factory in Old Fort, and will start operations by December 1st. About 300 pairs will be made daily.

Plateau—Flour Mill.—Dr. Ford and others are endeavoring to organize a company to erect a roller flour mill.

Ramseur—Cotton Mill.—The Columbia Manufacturing Co. has put a new boiler in its cotton mill.

Randleman—Bag Factory.—The Naomi Falls Manufacturing Co. will soon put in its bag factory 200 additional looms.

Randleman—Cotton Mill.—The Powhattan Manufacturing Co. will soon put thirty-two new looms in its cotton mill.

Rocky Mount—Planing Mill.—Parrish & Carpenter are enlarging their planing mill.

Salem—Cotton Factory.—The Arista Mills, manufacturers of cotton, have lately added new machinery.

Winston—Tobacco Factory.—W. W. Rankin, of Mooresville, and T. J. Allison, of Iredell, have leased building and will manufacture tobacco.

## SOUTH CAROLINA.

Aiken—Cotton Mill.—A cotton mill company is being formed. Dr. P. G. Croft can give information.

Charleston—Lumber Plant.—The Steinmeyer Lumber Manufacturing Co. has lately expended \$10,000 in improving its plant.

Columbia—Cotton Company.—Jasper, Noah J. and S. P. Miller have incorporated the Miller Cotton Co. for the purpose of dealing in cotton, etc. The capital stock is \$20,000.

Eberhardt—Cotton Gin.—C. Eberhardt & Son will rebuild their cotton gin recently burned.

Florence—Saw Mill.—B. C. Lambert will rebuild his recently burned saw mill.

Storeville—Grist Mill and Gin, etc.—S. O. Jackson will rebuild his gin and mill recently burned, and put in machinery for grinding wheat and corn.

## TENNESSEE.

Chattanooga—Electric-light Plant.—A new electric-light plant is being installed in the Look-out Inn.

Columbia—Feed Mill.—Baird & McLemore have lately put new machinery in their feed mill.

Dyersburg—Machine Works.—The Dyersburg Machine Co. will probably rebuild its recently burned plant.

Elizabethton—Cotton Mill.—A cotton mill will be erected. The Co-operative Town Co. can give information.

Elizabethton—Shoe Factory.—E. F. Hines, of Asheville, N. C., has contracted with the Co-operative Town Co. to remove his shoe factory to Elizabethton.

Memphis—Heading Factory.—An agreement has been closed between Memphis parties and the Standard Oil Co. by which they will establish a plant in Memphis for making oil-barrel headings. The plant will have a capacity for seventy-five cords of wood a day and is to be removed from Indiana.

Memphis—Rock Removal.—S. W. Roessler will receive sealed proposals until December 1 for the removal of Nonconah rock from the Mississippi river near Memphis.

Somerville—Creamery.—A company is being organized to start a creamery.

## TEXAS.

Austin—Corn, Saw and Shingle Mills.—The Mamie Irrigation & Mill Co., lately formed by L. P. Sicker and others, will build a saw mill, shingle mill and corn mill next summer.

Beaumont—Saw Mill.—The Reliance Lumber Co. will put new machinery in its saw mill.

Belton—Flour Mill.—The Bell County Roller Mill Co., reported last week as incorporated, has organized and will erect a flour mill.

Dallas—Navigation Company.—J. C. O'Connor, J. T. O'Connor, I. Lang, E. B. Smoot, James Maroney, W. L. Crawford and M. L. Crawford have incorporated the Bolivar Navigation Co. for the purpose of owning, constructing and operating deep-water channels, etc.; capital stock \$3,000,000.

Dallas—Tinware Factory.—The Dallas Tin Stamping Co., recently reported, has completed its plant and commenced operations.

Denison—Gas Plant.—The Denison Light & Power Co. has just completed new gas plant; cost of improvements \$30,000.

El Paso—Ore-pumping Works.—The El Paso Public Ore Sampling Co., lately reported as incorporated, has had a plant in operation about a year. F. W. Edelen is manager.

Hillsboro—Cottonseed-oil Mill.—E. Van Winkle and W. W. Boyd, of Atlanta, Ga., and Frank Files, J. C. Beard and J. F. Earb, of Hillsboro, have incorporated the Hillsboro Oil Co. with a capital stock of \$75,000.

Lawrence—Cotton Gin.—T. H. Fyke will rebuild his cotton gin recently burned.

Paris—Ice Company.—R. S. Ambrose, Russell Myrick, C. W. Dailey, H. H. Coffin and Horace Myrick have incorporated the Paris Ice Co. with a capital stock of \$75,000.

Tyler—Furniture Factory.—The Tyler Chair and Furniture Works, lately burned, will be rebuilt at once.

Waco—Ice and Refrigerating Plant.—The Waco Ice & Refrigerating Co. has contracted for the erection of a 50-ton plant with the Hercules Iron Works, of Chicago, Ill.

## VIRGINIA.

Alexandria—Manufacturing Rifles, etc.—The White Magazine Rifle Co. has been incorporated to manufacture magazine rifles and firearms; capital stock \$200,000.

Alexandria—Machinery Works.—The Holly Machinery & Supply Co. has been chartered to manufacture machinery, etc. Its capital stock is \$125,000.



Charlottesville.—Machinery Works.—The Becker Machine Co. has been incorporated with a capital stock of \$25,000 to manufacture patent machines, etc.

Covington.—Electric-light Plant.—John S. Ham is endeavoring to organize a stock company to erect an electric-light plant.

Hampton.—Brick and Tile Works.—The Powhatan Brick & Tile Co. has been incorporated to manufacture brick and tile with a capital stock of \$100,000.

Manchester.—Development Company.—The Actna Development Co. has been incorporated with a capital stock of \$100,000 to improve real estate, etc.

Newport News.—Real Estate.—The Home Land Co. has been chartered to deal in real estate, etc. Its capital stock is \$100,000.

Richmond.—Tobacco Factory.—James N. Boyd has let contract for the erection of a tobacco factory to cost \$20,000.

Richmond.—Tobacco Factory.—A. B. Eddins will rebuild his recently burned tobacco factory at a cost of \$12,000.

Richmond.—Gas Plant.—The board of aldermen has adopted a resolution to appropriate \$25,000 for the erection of a water gas plant. The mayor can give information.

#### WEST VIRGINIA.

Addison.—Saw Mill.—Henry Ringer will erect a saw mill in Webster county.

Berkeley Springs.—Saw Mills.—C. E. Jones will erect several portable saw mills in Morgan county.

Central City.—Bung Factory.—The Independent Bung Co., lately of Elizabeth, will erect a factory at Central City.

Charleston.—Manufacturing Machinery, etc.—The Waldron Construction Co. has been incorporated to manufacture and deal in machinery. Its capital stock is \$1,000,000.

Elk City.—Broom Factory.—The L. A. Carr Milling Co. has succeeded Doherty & Roy in the manufacture of brooms after enlarging the plant.

Elkins.—Saw Mill.—W. C. Russell has set up a portable saw mill at Elkins.

Kanawha City.—Ferry.—The Kanawha City & Charleston Ferry Co. has been incorporated.

Lost Creek.—Flour Mill.—C. L. Steel & Co. have purchased and improved the Lost Creek Roller Mills.

Morgantown.—Furniture Factory.—Price Bros. are improving their furniture factory.

Paw Paw.—Flour Mill.—R. D. Powell has put in a new 3-roller mill, purchased from the Willford & Northway Manufacturing Co., of Minneapolis, Minn.

Point Pleasant.—Foundry and Machine Works. The Point Pleasant Foundry and Machine Works, reported burned, will probably be rebuilt. Messrs. Heslop & Price are the proprietors.

Shepherdstown.—Grain Elevator.—G. T. Hodges has completed his grain elevator and commenced operations.

Welch.—Saw Mill.—Denman & Ritter have built a saw mill near Welch.

Wellsburg.—Real Estate.—The Corn Exchange Co. has been incorporated to deal in real estate, etc.; capital stock \$25,000.

Wellsburg.—Paper-bag Factory.—The S. George Co. has been incorporated for the purpose of manufacturing paper and paper sacks.

#### BURNED.

Dyersburg, Tenn.—Baker Bros.' ginnyery.

Dyersburg, Tenn.—The Dyersburg Machine Co.'s plant.

Greensboro, N. C.—The Faucette Tobacco & Snuff Co.'s factory.

Haddock, N. C.—J. M. Wright's mill in Columbus county.

Macon, Miss.—The Macon Machine and Iron Works; loss \$6,000.

Macon, Miss.—George A. Freeman's mill.

Mobile, Ala.—The Donald Lumber & Manufacturing Co.'s planing mill.

Mobile, Ala.—The Yellow Pine Lumber Co.'s planing mill and dry-kiln.

Mountainboro, Ala.—W. S. Rosson's cotton gin.

Norfolk, Va.—The Merchants & Farmers Peanut Co.'s factory.

Point Pleasant, W. Va.—The Point Pleasant Foundry and Machine Shops; loss \$15,000.

Richmond, Va.—The Richmond, Fredericksburg & Potomac Railroad Co.'s shops; loss \$20,000.

Rolling Fork, Miss.—Cartwright & Roberts's saw mill and cotton gin.

Tarboro, N. C.—Mac Weathershee's cotton gin.

Waynesboro, Ga.—Wm. Davis's cotton gin.

THE Sharon Boiler Works, Sharon, Pa., have a large force of hands at Spring, Valley, Wis., erecting three sets of boilers for a large charcoal furnace about to be started there. They are also putting up a Cowper-Kennedy hot-blast stove for the Iroquois Furnace Co., of Chicago. The works are running full time and report trade good.

#### BUILDING NOTES.

Baltimore, Md.—Building permits have been granted to J. K. Hubbard to erect five three-story brick buildings; S. D. Hutt, ten two-story brick buildings, and Potomac Building Association, six three-story brick buildings.

Bowling Green, Fla.—Church.—The Christian denomination intend building a church.

Charleston, W. Va.—Synagogue.—The Hebrew synagogue referred to in our last issue will be a two story brick structure, with terra-cotta finish outside, heated with hot air and lighted by gas and electricity. Higgs & Calderwood, of Charleston, have the contract, and Yost & Packard, of Columbus, Ohio, are the architects. The cost will be \$20,000.

Charlotte, N. C.—Jail.—Mecklenburg county will build a new jail or remodel the present one and put in steel cells. S. H. Hilton, chairman board of commissioners, should be addressed.

Chattanooga, Tenn.—C. C. Howard, mentioned in last issue, contemplates building a business block, but has not settled fully as to plans, etc.

Claremont, Va.—School Building.—It is expected that work will be commenced in the spring on the erection of a main building 65x55 feet for the Industrial Temperance & Collegiate Institute noted in last issue. It is contemplated to put in laundry machinery, etc. Rev. John J. Smallwood can give information.

Edgefield, S. C.—Hotel.—Architect Mims will prepare plans for a two-story brick hotel to be built by W. N. Burnett, John C. Sheppard, W. A. Strom and James Bennett. It will cost \$30,000.

Fort Worth, Texas.—Temple.—Plans have been adopted for the erection of the three-story Masonic temple. Major Haggart can give particulars.

Jacksonville, Fla.—The Board of Trade, B. P. O. Elks and the Library Association have selected a site on which they intend building jointly a three-story hall and office building to cost \$25,000.

Jacksonville, Fla.—Warehouse.—F. M. Robinson will build a large warehouse.

Llano, Texas.—Bank Building.—Wilson Bros. have been awarded contract to erect a \$12,000 bank building.

Louisville, Ky.—Hospital.—The city council has appropriated \$46,000 for the improvement of the City Hospital.

Lumpkin, Ga.—Courthouse.—The erection of a new brick courthouse to cost not more than \$25,000 is proposed. A. T. Fort can give information.

Memphis, Tenn.—James B. Cook will prepare plans for a two-story addition 65x37½ feet to the Shelby county workhouse. It will cost about \$6,000.

Memphis, Tenn.—Hotel, etc.—The Raleigh Springs Railroad Co., referred to in last issue, contemplates building a hotel at Raleigh Springs and a large boarding-house near its power station.

Mt. Sterling, Ky.—School Building.—C. W. Fowler, of the Kentucky Training School, wants plans for a school building to accommodate one hundred pupils, fifty of which are boarders; to have five recitation rooms, laboratory, living rooms, etc.

New Decatur, Ala.—Courthouse.—Hummel & Schaeke have been awarded contract at \$7,000 for the stone work for the new courthouse of Morgan county, previously mentioned.

Orlando, Fla.—F. J. Kennard has prepared plans for the Charleston block, a two-story brick and stone structure 140x144 feet, with a 66-foot tower.

Owensboro, Ky.—Warehouses.—C. Riley, Jr., referred to in last issue, will extend his bonded warehouse a distance of 100 feet. He will also build a warehouse 200x44 feet, and later on will erect a general storage warehouse.

Owensboro, Ky.—Warehouse.—The Leaf Tobacco Association will build a warehouse. John Higdon can give particulars.

Port Deposit, Md.—School Buildings.—Contract has been awarded for the buildings for the Jacob Tome Manual Training School. Jacob Tome can give particulars.

Richmond, Va.—Hotel.—The hotel mentioned in last issue as to be built by Lewis Ginter and John Pope, of Richmond, and Mr. Arents, of New York city, will be a modern structure and cost not less than \$500,000.

Roanoke, Va.—Hospital.—F. R. May has contract for the erection of the building for the Roanoke Hospital. It is to be a 3½-story brick and stone building 52x80 feet. Noland & De Saussure prepared the plans.

Rocky Mount, N. C.—Church and School Building.—The Catholics intend building a church and school building.

Savannah, Ga.—Hall.—The remodeling of the Masonic hall is under consideration.

Sumter, S. C.—Synagogue.—Rev. David Levy, of Charleston, reports that the Israelites intend building a synagogue to cost about \$5,000 from plans by Architect Lichberg, of Savannah, Ga.

Washington, D. C.—Barr & Sanner will build five three-story dwellings to have hot-water heating apparatus, electric lights, etc., to cost \$12,000. B. Stanley Simmons prepared the plans.

Wheeling, W. Va.—The Klewes-Kraft Co. has been awarded contract for the ice and cold storage warehouse for the Wheeling Ice & Cold Storage Co.

#### RAILROAD CONSTRUCTION.

Anniston, Ala.—Railroad.—The Radford Pipe Co. has been granted franchise to build a railroad from the East Tennessee Railroad to the pipe works and coke furnaces.

Bristol, Tenn.—Railroad.—The Holston Valley Railroad Co. has decided to build its railroad, previously mentioned, from Bristol through Sullivan county to their timber property south of Holston river and nine miles from Bristol.

Charleston, S. C.—Railroad.—The National Land Improvement & Manufacturing Co. contemplates building a railroad to connect its works with the South Carolina Railroad.

Chattanooga, Tenn.—Railroad.—The Chattanooga Terminal Railroad Co. has applied for a charter with Nap Loder, H. H. Webster, James R. Whitman, Geo. M. Clark and Franklin Harris as incorporators. The company proposes building a railroad from the Central Depot, in Chattanooga, thence west to and across the Tennessee river on a bridge it intends building, thence through Hamilton, Marion, Sevier, Blount and Van Buren counties. A connection with the Chattanooga Southern in Chattanooga is also contemplated.

Huntsville, Ala.—Street Railway.—W. G. Wells, referred to in last issue, will build three to four miles of street railway, to be operated at present by horse-power, and later on, if the undertaking proves successful, electricity will be adopted. There will be four 12-foot cars.

Jacksonville, Ala.—Railroad.—The Tredegar Mineral Railroad has built one mile of track into the central part of Jacksonville in past six months, and same is now in operation. Work is in progress on Y and switches at city terminal. Geo. H. Montgomery is chief engineer.

Key West, Fla.—Electrical Railroad.—The Key West Street Railway has, it is stated, been purchased by parties who will operate the road by electricity.

Laney, Ala.—Railroad.—The Birmingham, Laney & Piedmont Railroad Co. reports that it expects to commence surveys soon and build from Laney to Piedmont, thence from Laney to Birmingham and then from Piedmont to Tallapoosa, Ga.

Lulabville, Ga.—Railroad.—The Abbeville & Way Cross Railroad Co. (office, Lulabville) will, it is stated, at once extend its road from Lulabville to some deep-water point.

Machen, Ga.—Railroad.—David Robinson, of Savannah, secretary, writes that the Middle Georgia & Atlantic Railroad will proceed to complete its road from Machen to Covington within a few weeks. Preparations are now in progress.

Manatee, Fla.—Railroad.—George B. Morton, president of the Arcadia, Gulf Coast & Lakeland Railroad, has, it is stated, let contract for building a railroad from Manatee to a point on the Alafia river.

Memphis, Tenn.—Electrical Railroad.—The Raleigh Springs Railroad Co. will build a branch track to connect with the Tennessee Midland Railroad.

Pickens, S. C.—Railroad.—The Pickens Railroad Co. will, it is stated, effect financial arrangements for the completion of its railroad from Pickens to Easley. J. H. Burckhalter, of Augusta, Ga., can give particulars.

Rockwood, Tenn.—Railroad.—White & Sylvester have completed the preliminary survey from Rockwood to Crossville for the citizens of Rockwood, and have found a very satisfactory line.

Sanford, N. C.—Railroad.—The Cape Fear & Yadkin Valley Railway Co. (office, Fayetteville) will build a short branch to the quarries of the Carolina Brown Stone Co.

Tallapoosa, Ga.—Railroad.—It is stated that arrangements are now being made for building the Georgia, Tennessee & Illinois Railroad, projected from Tallapoosa to Stevenson, Ala., a distance of 125 miles, and surveys for which have been made. L. F. Bellinger is chief engineer.

Wadesboro, N. C.—Railroad.—Fleming Gardner, chief engineer of the Atlantic Coast Line (office, Wilmington), has completed the preliminary survey of the second route proposed for the extension from Wadesboro to Winston.

Westlake, La.—Railroad.—The location of the line of the Calcasieu, Vernon & Shreveport Railroad is in progress, the preliminary work being finished. The line extends nearly due northwest from Westlake. About fifteen miles of earthwork, mostly of a light character, to be completed by next spring, will be let to contract on completion of the location. Shotts & Furlon, of Lake Charles, are the engineers in charge.

#### MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Artesian Well.—Bids are wanted for the boring of an artesian well at El Paso, Texas. Dan Kelly will furnish specifications on application.

Boiler.—Randall & Osborn, Merrill, Mich., want a boiler.

Boring Machinery.—T. N. Henderson, Tampa, Fla., will want boring machinery.

Boring Machinery.—The Tyler Chair and Furniture Works, Tyler, Texas, wants boring machinery.

Brick Machinery.—C. P. Hudson & Co., Benton, Ky., are in the market for pressed-brick machinery and want catalogues and prices.

Can Machinery.—H. G. Hall, Blacksburg, S. C., wants estimates on machinery for making fruit cans.

Cars.—The James River Coal Co., Huguenot, Va., wants fifty mine cars (2-foot gauge), six, eight and twelve to the yard.

Cars.—The Ocean Springs Lumber Co., Ocean Springs, Miss., wants six logging cars. Address Parker Earle, president.

Chair Machinery.—The Tyler Chair and Furniture Works, Tyler, Texas, wants a full line of machinery for manufacturing chairs.

Corn Mill.—John P. Moore, Catawba, N. C., will purchase corn-mill machinery.

Cotton Gin.—T. H. Fykes, Lawrence, Texas, will want three 60-saw gins, with feeders, suction and distribution and cotton press.

Dry-kiln.—J. C. Thompson, Thomaston, Ga., wants to purchase a dry-kiln for lumber.

Elevators.—C. Riley, Jr., Owensboro, Ky., will require elevators for warehouses.

Engine.—Randall & Osborn, Merrill, Mich., want an engine.

Flour Mill.—The Bell County Roller Mill Co., Belton, Texas, will be in the market for flour-mill machinery. Address Sam S. Walker.

Hoop Machinery.—Randall & Osborn, Merrill, Mich., want machinery for making coiled hoops.

Lathe.—The Tyler Chair and Furniture Works, Tyler, Texas, want automatic lathe.

Laundry Machinery.—Rev. John J. Smallwood, Claremont, Va., expects to purchase laundry machinery next year.

Locomotives, etc.—The Ocean Springs Lumber Co., Ocean Springs, Miss., wants a locomotive about 10x16 cylinders, independent tender and front trucks, standard gauge. Address Parker Earle, president.

Match Factory.—Thomas K. Gatchell, Selma, Ala., wants to correspond with manufacturers of machinery for match factory.

Matcher.—J. E. Biecht, superintendent, Myers, Fla., will want a matcher.

Mortiser.—T. N. Henderson, Tampa, Fla., will want mortiser.

Mortisers.—The Tyler Chair and Furniture Works, Tyler, Texas, wants mortisers.

Planer.—T. N. Henderson, Tampa, Fla., will want a buzz planer.

Planer.—J. E. Biecht, superintendent, Myers, Fla., will want a planer.

Rails.—The James River Coal Co., Huguenot, Va., wants T iron rails, frogs, spikes, etc.

Rails.—The Ocean Springs Lumber Co., Ocean Springs, Miss., wants five miles of 30-pound steel rails, spikes and splice bars. Address Parker Earle, president.

Railway Supplies.—T. W. Carmichael, secretary of the Lazeurville Real Estate Co., Lazeurville, W. Va., wants to correspond with dealers in street railway supplies.

Resaw.—E. M. Irish, Hammond, La., wants a resaw.

Saw.—T. N. Henderson, Tampa, Fla., will want a jib saw.

Saws.—The Tyler Chair and Furniture Works, Tyler, Texas, want rip, cut-off and band saws.

Shingle Mill.—J. E. Biecht, superintendent, Myers, Fla., will want a shingle mill.

Shingle Mill.—The Lecompte Lumber & Shingle Co., Lecompte, La., wants to contract for the rebuilding of its shingle mill.

Tank Machinery.—H. G. Hall, Blacksburg, S. C., wants machinery for making canning tanks.

Tools.—J. E. Biecht, Myers, Fla., will want carpenters' tools.

E. M. Irish, of Hammond, La., wants catalogues and prices of office and library desks.

The Broadfoot Brace Co., of Decatur, Ala., L. S. Robinson, secretary and treasurer, wants to purchase wheeled scrapers.

The Hauser, Brenner & Fath Co., Cincinnati, Ohio, wants 8x8-inch, thirty-two feet long, and 12x12 or 14-inch, fourteen to eighteen feet long, first and second yellow poplar; also a large amount of 3-inch first and second white oak not less than nine months old.

The Tampa Lumber Co., of Tampa, Fla., wants to buy carload lots of barrel hoops, and desires to correspond with manufacturers.

V. de Castro, of Key West, Fla., wants catalogues from furniture manufacturers.

## SOUTHERN FINANCIAL NEWS.

### New Banks.

Bastrop, La.—A bank with a capital stock of \$50,000 is to be organized. James Bussey is to be president, and Alex. B. Marks, cashier.

Magnolia, Miss.—A branch of the Bank of Summit, of Summit, has been established in Magnolia with J. E. Wolfe, manager.

Pocomoke City, Md.—E. G. Polk & Co. will start a private bank.

Warrenton, Ga.—The Bank of Warrenton, referred to in last issue, has a capital stock of \$50,000.

Alexandria, Va.—The Columbus Accident Insurance Association of the United States has been incorporated at Alexandria with a capital stock of \$100,000.

Baltimore, Md.—The Federal Permanent Building Association has been incorporated by W. T. Moore, G. W. Medinger, J. C. Boyd and others. The capital stock is \$101,000.

Baltimore, Md.—The First National Bank has declared a semi-annual dividend of 3 per cent.; Second National Bank, a semi-annual dividend of 4 per cent.; Merchants & Mechanics' Permanent Building & Loan Co., a semi-annual dividend of 3 per cent.; Old Town Fire Insurance Co., a semi-annual dividend of 2½ per cent.

Charleston, S. C.—The Germania Mutual Fire Insurance Co. has been organized by W. F. Jordan, J. H. Claussen and others.

Cumberland, Md.—Alleghany county has sold \$20,000 of school bonds to the Second National Bank of Cumberland at 104½.

Darlington, S. C.—The Laboring Men's Building & Loan Association has been incorporated by J. P. Brockerton, T. L. Cathis, S. S. Drebe and others.

Jackson, Tenn.—The question of submitting to the voters of Madison county a proposition to issue \$250,000 of bonds to be expended in the county for the building of gravel roads and iron bridges is being discussed.

Key West, Fla.—The city has decided to issue \$100,000 of water works bonds.

Lexington, Ky.—J. H. Davidson, mayor, gives notice that the city will redeem on January 15, 1893, sixty bonds of \$1,000 each, numbered from 1 to 60, inclusive, issued May 1, 1886, and maturing thirty years after date. Thirty bonds of like amount issued on the same date and known as the A. and M. College bonds will also be redeemed.

Lumpkin, Ga.—Stewart county will petition the legislature for authority to vote on the issuance of \$25,000 of bonds to build a new courthouse. A. T. Fort can give particulars.

Macon, Ga.—The Metropolitan Street Railway Co. is preparing to issue 20-year 6 per cent. bonds dated November 1, 1892. The company is authorized to issue bonds to the amount of \$125,000, and the Farmers' Loan & Trust Co. of New York is the trustee.

New Orleans, La.—The Crescent City Railroad Co. has declared a dividend of \$1.25 per share.

Way Cross, Ga.—The Way Cross Loan & Trust Co., previously mentioned, has been incorporated.

## TRADE NOTES.

The Commercial Electric Co., of Indianapolis, a new company just started for the manufacture of dynamos and motors, has placed the contract for the equipment of its works with the Lodge & Davis Machine Tool Co., of Cincinnati, for lathes, planers, shapers, drill presses, milling machines, etc.

The Lobdell Car Wheel Co., of Wilmington, Del., has placed the contract for a new machine shop with the Berlin Iron Bridge Co., of East Berlin, Conn. The building will be sixty-seven feet in width, divided into a central portion twenty-five feet in width, with a wing on each side twenty-one feet in width. The central portion is controlled by a 15-ton traveling crane. The building will be 151 feet long, the entire frame-work being of iron, the side walls being of brick.

A VERY important addition to machinery for manipulating clay is a large double-acting universal repress for pressing all kinds of clay products, such as paving blocks, roofing tile and ornamental blocks, built by C. W. Raymond &

Co., Dayton, Ohio. These presses are now in operation at the works of the Imperial Shale Brick Co., Canton, Ohio; Virginia Vitified Brick & Sewer Pipe Co., Lynchburg, Va.; Middleport Granite Brick Co., Middleport, Ohio; Wahash Clay Co., Veedsburg, Ind., all of whom commend them in the very highest terms.

WARREN WEBSTER & Co., 491 North 3d street, Philadelphia, Pa., patentees and manufacturers of the Webster vacuum feed-water heater and purifier, and licensees for the sale of patent rights of the Williams vacuum system of steam heating, report the following orders during the month of October: David Lupton Sons, Philadelphia, Pa.; Lord & Taylor, New York; Armour & Co., Chicago, Ill.; Chicago Malleable Iron Works, Chicago, Ill.; Boughen Engineering Co., Cincinnati, Ohio; James McLurg & Co., Pittsburg, Pa.; M. H. Crane, Cincinnati, Ohio; Lalance & Crosjean Manufacturing Co., Harrisburg, Pa.; Prahar & Bro., Brooklyn, N. Y.; Apollo Iron & Steel Co., Apollo, Pa.; Roaring Spring Blank Book Co., Roaring Spring, Pa.; Pennsylvania Railroad Co., Union Depot, Pittsburg, Pa.; Penn Steel Casting & Machine Co., Chester, Pa.; Remington Paper Co., Watertown, N. Y.; Armour & Co., Kansas City, Mo.; Botsford Paper Mill Co., Kalamazoo, Mich.; M. Price, Newark, N. J.; Rison Iron and Locomotive Works, San Francisco, Cal.; Charles Kaestner & Co., Chicago, Ill.; Maryland Steel Co., Sparrow's Point, Md.; Commonwealth Hotel, Harrisburg, Pa.; Harrisburg Foundry & Machine Co., Harrisburg, Pa.; Crompton Company, Guinick, R. I.; American Fire Engine Co., Seneca Falls, N. Y.; Royal Weaving Co., Pawtucket, R. I.; Pennsylvania Steel Co., Steelton, Pa., this order being for 8,250 horse-power. They have just issued a new catalogue.

## TRADE LITERATURE.

THE Sharon Fire-Brick Works, of Sharon, Pa., has issued a neat catalogue showing the extensive line of fire-brick shapes made by them. Analyses are also given, showing the excellent quality of the fire-clay, and also of the ganister rock used in making silica bricks. These latter are a specialty made by the firm, and are formed in the various shapes required in glass, iron and steel furnaces. Illustrations and dimensions are given for all of these bricks, and also for the forms of mill, hot-blast stove and other classes made. The testimonial letters from users of these bricks show their excellence. This concern enjoys the reputation of being the largest in its line in the State.

## OPPORTUNITIES FOR INVESTMENT

We shall be pleased to answer communications and give information concerning the following opportunities for investment. Address all correspondence to the MANUFACTURERS' RECORD, Baltimore, Md., and be particular to give the number of the advertisement to which you refer.

No. 1—STREET RAILWAY.—The owners of a valuable street railway franchise in Texas, extending through the thickly settled portion of a large city and into the suburbs, desires to place the securities of the company or to negotiate a loan to be used in the construction of the road. The cost of building the line is estimated at \$50,000, and it is calculated to yield a gross annual revenue of \$10,000.

No. 2—COTTON MILL.—A part owner in a Southern cotton mill which has been in successful operation for a number of years, desires to obtain money for the purchase of the other interests in the property. Ample security will be given for a loan of \$10,000.

No. 3—IRON FOUNDRY.—An iron foundry engaged in the manufacture of a specialty for which there is a ready sale, has demand for twice its present output. The company desires to increase its capital to the extent of \$10,000 for the purpose of doubling the capacity of its plant.

No. 4—HOTEL.—A hotel in a prosperous Southern city, which cost \$50,000, can be purchased for \$15,000, including all furniture and fixtures and about seventy-five lots adjoining, 25 by 150 feet. House is new and in good condition. Connects with business part of the city by granolithic sidewalks, and electric cars pass the hotel every five or ten minutes. Reasonable terms will be made with a responsible purchaser.

No. 5—RAILROAD CHARTER.—The holders of a charter for a railroad 320 miles in length desire to secure the capital necessary for its construction. The line runs for nine miles through large deposits of iron ore; 100 miles of the line is through valuable fields of canal and coaling coal. There is a rich oil field on the route, and for 100 miles it traverses valuable timber lands containing oak, walnut, cherry, poplar and other woods. In the tributary agricultural territory 100,000,000 pounds of tobacco are produced.

No. 6—PHOSPHATE LAND near Eureka, Fla., in the phosphate belt. It is heavily timbered with long-leaf pine; also a small tract near Fort

Meade, Fla. Several small tracts in Marion, Orange, Lake, Polk, Pasco and Putnam counties, Fla., suitable for orange and vegetable growing.

No. 7.—A MANUFACTURING COMPANY in Texas desires to place \$25,000 ten-year 8 per cent. mortgage bonds, the total issue being \$50,000, of which \$32,000 has already been sold. The proceeds are to be used for final payments on machinery and for working capital. The bonds are secured by the entire property of the company, consisting of factory building, machinery and real estate, all of which has a clear title and is free of any incumbrance.

No. 8—PHOSPHATE LAND.—600 acres pebble phosphate land within one and one-half miles of two important and competitive railroads. Extensive deposits in sand and marl matrix from two to fifteen feet deep and ranging from 30 to 80 per cent. pebble. Analyses show from 60 to 80 per cent. phosphate of lime.

## Where Quail and Deer Abound.

The best quail shooting may be had in the Shenandoah valley, Virginia, and the best deer hunting in the mountains of West Virginia. Both sections are accessible by Baltimore & Ohio express trains from New York, Philadelphia, Baltimore and Washington. For detailed information as to rates, time of trains, etc., write to Chas. O. Scull, general passenger agent B. & O. R. R., Baltimore, Md.

## Winter Excursion Tickets

To all Florida and other Southern health and pleasure resorts, to Havana, Cuba, to Asheville and Hot Springs, N. C., Luray, Old Point Comfort, Atlantic City and other winter resorts have been placed on sale at Baltimore & Ohio ticket offices at greatly reduced rates. For detailed information apply to nearest B. & O. ticket agent, or to Chas. O. Scull, general passenger agent, Baltimore, Md.

## The Century Magazine in 1893.

It would be hard for a person who cares for good reading to make a better investment than a year's subscription to *The Century Magazine*. No region is too remote, no expense too great, if it will only produce what the *Century's* readers want. This is the policy that has made it, as the *Pall Mall Budget*, of London, says, "by far the best of the magazines, English or American."

The November number begins a new volume, and contains the first chapters of a powerful novel of New York society called "Sweet Bells Out of Tune," written by Mrs. Burton Harrison, the author of "The Anglomaniacs." In this story the fashionable wedding, the occupants of the boxes in the Metropolitan Opera House, the "smart set" in the country house, are faithfully reflected, and the illustrations by Charles Dana Gibson, *Life's* well-known cartoonist, are as brilliant as the novel.

In this November number begins also a great series of papers on "The Bible and Science," opening with "Does the Bible Contain Scientific Errors?" by Professor Shields, of Princeton, who takes decided ground that the Bible does not contain scientific errors of any moment, and who most interestingly states the case from his point of view. Other articles in this series will include one in the December (Christmas) number, "The Effect of Scientific Study upon Religious Beliefs."

An important series of letters that passed between General Sherman and his brother, Senator John Sherman, is also printed in November, which number contains also contributions from the most distinguished writers, including an article by James Russell Lowell which was not quite completed at the time of his death. The suggestion which Bishop Potter makes in the November *Century* as to what could be done with the World's Fair if it were opened on Sunday is one which seems the most practical solution of the problem yet offered.

The December *Century* is to be a great Christmas number—full of Christmas stories, Christmas poems and Christmas pictures—and in it will begin the first chapters of a striking novel of life in Colorado, "Benefits Forged," by Wolcott Balestier, who wrote "The Naulahka" with Rudyard Kipling.

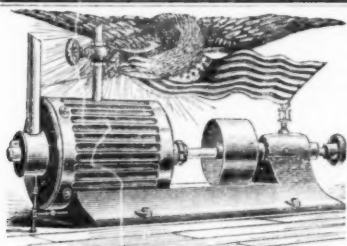
Papers on good roads, the new educational methods and city government are soon to come.

Four dollars will bring you this splendid magazine for one year, and certainly no cultivated home can afford to be without it. Subscribers can remit directly to the publishers, The Century Co., 33 East 17th street, New York. They should begin with November, and so get first chapters of all the serials, including "Sweet Bells Out of Tune."

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## SOUTHERN BANKS.

Below is published a list of Banks and Bankers in the Southern States, whom the MANUFACTURERS' RECORD commends to its readers:

### GEORGIA.

**AUGUSTA—Georgia Railroad & Banking Co.,** Chas. H. Phinizy, President. Capital \$4,200,000.

**MACON—American National Bank.** Wm. H. Burden, President. Capital \$500,000.

**MACON—Exchange Bank.** H. J. Lamar, President; J. W. Cabaniss, Cashier. Capital and surplus \$550,000.

**MACON—First National Bank.** J. C. Plant, President. Capital and surplus \$260,000.

### SOUTH CAROLINA.

**COLUMBIA—Carolina National Bank.** W. A. Clark, President. Capital \$100,000.

### VIRGINIA.

**BUENA VISTA—Buena Vista Loan & Trust Co.** C. B. Guyer, Pres. Capital \$100,000.

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Investments made (at usual rate of commission) in safe and reliable interest paying Southern securities, and 1st mortgage loans on improved city and town real estate. Correspondence solicited as to all Southern investments. Being within easy reach of all parts of the South, thorough and careful investigation can be made of intended investments or purchases.

Officers: Geo. B. Edwards, president; P. N. Pickens, cashier; R. E. Muckenfuss, secretary and treasurer; J. Lamb Perry, solicitor; Smythe & Lee, general counsel.

### DIRECTORS:

A. S. J. PERRY, of Johnston, Crews & Co., wholesale dry goods.

WILLIAM M. BIRD, of Wm. M. Bird & Co., wholesale paints and oils.

JAMES ALLAN, of James Allan & Co., jewelers.

I. H. F. KOENIG, with Knoop Frerichs & Co., cotton exporters.

Geo. B. EDWARDS, President Elec. L. & Power Co.

## JOHN L. WILLIAMS & SON, BANKERS,

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SEABOARD AND ROANOKE RAILROAD COMPANY

FIRST MORTGAGE 5 PER CENT. BONDS,

DATED JULY 1, 1886,

DUE JULY 1, 1926.

INTEREST PAYABLE SEMI-ANNUALLY, JANUARY AND JULY,

AT THE

FARMERS AND PLANTERS' NATIONAL BANK OF BALTIMORE.

We have recently purchased the above forty-year bonds of the Seaboard and Roanoke Railroad Company, the proceeds of which have been applied to the purchase of very valuable and extensive terminal facilities for the Georgia, Carolina and Northern Railroad Company at Atlanta, Ga. These terminals remain the property of the Seaboard and Roanoke Railroad Company without any incumbrance.

The Seaboard and Roanoke Railroad is the parent stem of the Southern system, known as the Seaboard Air Line. It has for many years past, after meeting all its fixed charges, paid annual dividends of from 6 to 10 per cent. on its stock, and in addition has accumulated a surplus property valued at over \$2,000,000.

The Seaboard and Roanoke Railroad holds large interests in the Old Dominion Steamship Company of New York, and the Baltimore Steam Packet Company.

The annual report recently published shows:

Gross Earnings.....	\$7,547 00
Expenses of operation.....	471,706 00
Net income from operation.....	\$233,763 00
Income from other sources.....	\$4,890 00
Total income.....	\$238,653 00
Less taxes, interest, dividends and other charges.....	258,471 00
Surplus.....	\$60,182 00

We offer the above bonds at 103 and accrued interest. We reserve the right to advance the price without notice. Bonds of this road previously issued under the same mortgage have been placed at different times in this market at prices ranging from 106 to 112 flat.

For further particulars apply to

MERCANTILE TRUST AND DEPOSIT COMPANY OF BALTIMORE.

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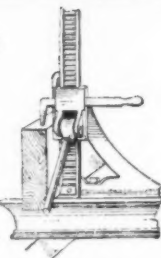
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Corliss Engines, one e-ch, 30x60, 32x48, 26x48, 23x36, 20x48, 18x48, 16x42, 14x48, 12x36. Buckeye Engines, one each, 11x20, 11x21, 14x24, 15x18. One pair of Woodruff & Beach Engines, automatic cut-off, 20x48. Slide-Valve Engines, 10x16, 11x24, 8x8, 11x16, 12x24, 7x14 and 14x16. Steel Boilers, assorted sizes, 50, 55, 60, 80 and 100 horse power—all insured for 80 pounds. Fan Blowers, 8 and 9 ft.; Ingersoll Rock Drills; Steam Pumps—Worthington, Blake, Cameron and Niagara; Iron Lathes, 4 inches by 5 1/2 feet; 1,500-gallon tank, and smaller sizes; Buckley and Jet Condensers; Hoisting Engines, all in good working condition. Send for catalogue.

**GEO. M. CLAPP,**

74 Cortlandt Street, NEW YORK.

LIST OF DISPLACED WESTINGHOUSE STANDARD AUTOMATIC ENGINES, IN GOOD RUNNING ORDER, FOR SALE CHEAP BY THE SOUTHERN COTTON OIL CO., GIRARD NATIONAL BANK BUILDING, PHILADELPHIA, PA.

4 60 horse-power Engines, at New Orleans, La.  
1 150 horse-power and one 60 horse-power, at Montgomery, Ala.  
2 150 horse-power, at Atlanta, Ga.  
1 150 horse-power, two 45 horse-power and one 60 horse-power, at Savannah, Ga.  
2 45 horse-power, one 60 horse-power and one 150 horse-power, at Columbia, S. C.  
1 75 horse-power, at Houston, Texas.

ALSO LIST OF DISPLACED HYDRAULIC PUMPS, IN GOOD RUNNING ORDER, MADE BY THE SMITH & VAILE CO. AND NOW AT THE FOLLOWING MILLS OF THE SOUTHERN COTTON OIL CO:

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1 Complete set of Spoke Machinery, used not over four months. Cost \$1,500. Offer wanted.

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96 in. swing, 26 ft. bed, h'ds raised to sw'g 13 ft. A  
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Shafting Lathe, A1.  
32 in. swing, 12, 14, 16, 18 ft. beds. New.  
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20 in. swing 7 1/2 and 8 ft. beds. Ames. Good.  
18 in. swing, 8 ft. bed. Several makers.  
16 in. swing, 6 and 8 ft. beds. Several makers.  
15 in. swing, 6 and 8 ft. beds. Several makers.  
14 in. swing, 8 ft. bed. Several makers.  
15, 18 & 21 in. st'ke. Crank shapers, steptoe. New.  
20, 26 & 30 in. stroke. G'rd shapers, steptoe. New.  
9 in. 16 in. stroke. Crank shapers. Good order.  
24 in. stroke. Geared shapers. Good ord-r.  
20 in., 22, 24, 26, 30, 36 in. Drills. New & 2d hand.  
24 in. x 4 ft., 5 ft., 6 ft. Planers  
26 in. x 6 ft. Planers. 33, 36 in. x 10 and 12 ft. Planers.  
54 in. x 42 in. x 21 1/2 ft. Planers.  
62 in. x 48 in. x 17 ft. Planers.  
72 in. x 48 in. x 33 ft. Planer, two heads.  
120 in. x 120 in. x 16 ft. Planers. Betts, two heads.  
40 h-p. Vertical Engine. N. Y. S. P. Co. A1.  
11x18 horizontal slide valve Engine.  
1,100 and 3,000-lb. BEMENT STEAM HAMMER.  
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150 and 100-lb. MASSEY STEAM HAMMER.  
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### LARGE BOILER and PLATE BENDING ROLLS

13 feet between housing. Rolls 15 inches diameter, with rev-rsible Engine. Will roll up to 1 1/2 inch plate. Built by Bement & Co., and are equal to new.

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Complete outfits, Power Plants, Belting, etc.  
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2,000 tons 53-pound Steel, 400 tons 35-pound Iron, 200 tons 30-pound Iron, all good order, with splices. Two six-driver, 3-ft. gauge Engines. Four standard gauge Freight Engines.

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TRUCK AND STREET RAILS, SPICE RAIL, TRUCK RAILS AND NUTS, R. R. SPIKES

FROGS, CROSSING, SWITCHES AND FIXTURES.

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BAR IRON AND STEEL, SHEET IRON AND STEEL, CORRUGATED IRON.

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We have no Agents.

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IMMEDIATE DELIVERY.

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## ROADS,

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Whether you wish to BUY or SELL, WRITE US.

## SOUTHERN LUMBER DIRECTORY.

A List of Leading Lumber Dealers and Manufacturers in the South.

This list of representative Southern lumber merchants and manufacturers is published for the benefit of those who desire to reach responsible houses in this branch of business in the South. Readers of the MANUFACTURERS' RECORD who have occasion to correspond with any of the firms mentioned below will confer a favor by mentioning this paper.

## Yellow Pine.

I. B. Gordon & Co., Alpine, Ala.  
Villa Rica Lumber Co., Anniston, Ala.  
J. R. Adams & Sons, Birmingham, Ala.  
Hawkins & Smith, Birmingham, Ala.  
C. T. Hughes & Co., Birmingham, Ala.  
Riddle & Simpson, Birmingham, Ala.  
Southern Supply Co., Birmingham, Ala.  
Marbury & Jones, Bozeman, Ala.  
D. W. & U. Blacker, Brewton, Ala.  
W. W. Weaver, Castleberry, Ala.  
J. A. Dudley, Clanton, Ala.  
O. A. Duke, Clanton, Ala.  
L. B. Wells, Clanton, Ala.  
H. C. Higman & Co., Decatur, Ala.  
Dunham Lumber Co., Dunham, Ala.  
Gadsden Lumber Co., Gadsden, Ala.  
Tuscaloosa Lumber Co., Hull, Ala.  
Bay City Lumber Co., Mobile, Ala.  
E. B. Vaughan, Mobile, Ala.  
Alabama Lumber Syndicate, Montgomery, Ala.  
S. B. Allen & Co., Montgomery, Ala.  
W. A. Drives & Co., Montgomery, Ala.  
Moore, Kirkland & Co., Montgomery, Ala.  
Wagar Lumber Co., Wagar, Ala.  
W. W. Wadsworth, Wadsworth, Ala.  
Arkadelphia Lumber Co., Arkadelphia, Ark.  
Empire Lumber Co., Ashton, Ark.  
Long Bell Lumber Co., Buckner, Ark.  
Cotton Belt Mill Co., Cotton Belt, Ark.  
Eagle Lumber Co., Eagle Mills, Ark.  
Red River Lumber Co., New Lewisville, Ark.  
A. J. Neimeyer Lumber Co., Waldo, Ark.  
Fordyce Lumber Co., Fordyce, Ark.  
The Florida Phosphate Co. Ltd., Phosphoria, Fla.  
J. S. Betts & Co., Ashburn, Ga.  
Gress Lumber Co., Atlanta, Ga.  
Wilson Coal & Lumber Co., Atlanta, Ga.  
Donalson Lumber Co., Donalsonville, Ga.  
Perkins Manufacturing Co., Augusta, Ga.  
Stillwell, Millen & Co., Savannah, Ga.  
E. B. Hunting & Co., Savannah, Ga.  
Georgia Lumber Co., Savannah, Ga.  
F. F. Putney, Hardaway, Ga.  
Charles Bewick & Co., Hazlehurst, Ga.  
Alderfer & Bull, Isabella, Ga.  
Hogan & Winger, Kensington, Ga.  
J. A. Williams, Sumner, Ga.  
A. J. Duncan & Co., West Bowersville, Ga.  
W. E. Mayne, Carpenter, Ky.  
P. Hendrickson, Conant, Ky.  
Perkins & Miller Lumber Co., Ltd., Westlake, La.  
Lock-Moore & Co., Ltd., Westlake, La.  
R. J. Aycock, Longstreet, La.  
C. P. Brasher, Marthaville, La.  
Joseph Horat, Maugansville, Md.  
Elliott, Crawford & Co., Myrtle, Miss.  
P. B. Myers & Son, Myrtle, Miss.  
Ocean Springs Lumber Co., Ocean Springs, Miss.  
B. J. Cansey, West, Miss.  
Cary E. Spence, Pass Christian, Miss.  
Keystone Lumber & Imp. Co., Bogue Chitto, Miss.  
J. S. Blackburn, Ellisville, Miss.  
W. L. Rankin & Bro., Shannon, N. C.  
A. E. Rogers, Mullins, S. C.  
R. F. Moss, Booker, Va.  
The A. F. Withrow Lumber Co., Millboro Depot, Va.  
U. B. Simpson & Son, Naruna, Va.

## North Carolina Pine.

Page Lumber Co., Aberdeen, N. C.  
The Greenville Land & Imp. Co., Greenville, N. C.  
Gulford Lumber Mfg. Co., Greensboro, N. C.  
Goldsboro Lumber Co., Goldsboro, N. C.  
G. Vyne & Son, Wilkesboro, N. C.  
John Hickson & Co., Lynchburg, Va.

## Cypress.

Morris & England, Keo, Ark.  
Cypress Lumber Co., Sherrill, Ark.  
T. O. Wilson Lumber Co., Tillar, Ark.  
Suehner & Brown, Peach Orchard, Ark.  
Moline Lumber Co., Helena, Ark.  
J. M. Milburn & Bro., Greenway, Ark.  
J. C. McCain, Greenway, Ark.  
W. R. Emerson, Emerson, Fla.  
J. C. Burleigh, Midland, Fla.  
F. S. Bamberg, Jasper, Fla.  
S. J. Temple, Temple's Mills, Fla.  
J. P. Little, Sumner, Fla.  
Geo. H. Barker, Waldo, Fla.  
A. A. Bunnell, Raulerson, Fla.  
Windemere Land & Lumber Co., Windemere, Fla.  
Kelly, Cosby & Co., Jug Tavern, Ga.  
Dietrich & Dopson, Lenox, Ga.  
W. T. McArthur, McArthur, Ga.  
W. H. Moxley & Co., Macon, Ga.  
W. R. Peterson & Co., Wadley, Ga.  
Lawless & Kyle, Franklin, La.  
Louisiana Cypress Lumber Co., Harvey, La.  
Callahan & Lewis Mfg. Co., Ft. Tetter, La.  
McEwen & Murray, New Orleans, La.  
Hanson & Smith, Wilmington, N. C.

J. C. Fulton, Aransas Pass, Texas.  
Calcasieu Lumber Co., Austin, Texas.  
M. T. Jones & Co., Childress, Texas.  
J. H. Folkey, Korville, Texas.

## Hardwoods.

North Alabama Lumber Mfg. Co., Bridgeport, Ala.  
Bridgeport Lumber Co., Bridgeport, Ala.  
Hill & Mitchell, Center Star, Ala.  
W. A. Koepfel, Coaling, Ala.  
Decatur Lumber Co., Decatur, Ala.  
H. S. Freeman, Decatur, Ala.  
Black Warrior Lumber Co., Demopolis, Ala.  
Alabama Lumber & Mfg. Co., Gurley, Ala.  
G. Vaughan, Hollywood, Ala.  
C. G. Huffman, Hollywood, Ala.  
Clifton & Hendrix, Jasper, Ala.  
Elliott & Carter, Jasper, Ala.  
W. M. Beatty, Austin, Ala.  
J. W. Ray, Arkadelphia, Ark.  
Desha Lumber Co., Arkansas City, Ark.  
Batesville Lumber Co., Batesville, Ark.  
Russell & Elder, Beebe, Ark.  
South'n Hardwood Lumber Co., Black Rock, Ark.  
E. M. Ford Land & Timber Co., Gilmore, Ark.  
Kelley & Wells Lumber Co., Newport, Ark.  
Cream City Lumber Co., Lamberthville, Ark.  
J. M. McElert, Lowell, Fla.  
Ray & Geise, Bronwood, Ga.  
Altamaha Cypress Lumber Co., Brunswick, Ga.  
Montford & Mitchell, Butler, Ga.  
Glasgow & Henderson, Cassville, Ga.  
Green & Eshum, Clay Hill, Ga.  
W. H. Allen, Cordele, Ga.  
Greer Bros., Aila, Ga.  
D. T. Harris, Dixon, Ga.  
W. T. Opie, Dover, Ga.  
A. J. McMullen, Hartwell, Ga.  
Matthews & Anderson, Knoxville, Ga.  
R. W. Ballard, Newton Factory, Ga.  
O. W. Wadley, Rogers, Ga.  
L. T. Brawner, Adairville, Ky.  
G. W. Hummer, Adairville, Ky.  
W. Conn & Son, Bedford, Ky.  
Snider Bros., Berea, Ky.  
Gibson & Hale, Flat Lick, Ky.  
J. L. Naylor, Wickliffe, Ky.  
Samuel Anglen, Lafayette, Ky.  
H. E. Miller, Lewisburg, Ky.  
Fetter Cochran & Co., Louisville, Ky.  
J. C. Williamson, Mouth of Pond, Ky.  
The Cumberland Co., Middleborough, Ky.  
Waters & Bringham, Pineville, La.  
J. H. McBride, Winnfield, La.  
The Loomis & Hart Mfg. Co., Chattanooga, Tenn.  
E. Cravens, Bagwell, Texas.  
Jas. M. Williams, Charlottesville, Va.  
Smith & Co., Reedy Ripple, W. Va.  
Shelly & Wigram, Romney, W. Va.

## Shingles.

A. C. Danner, Mobile, Ala.  
J. Bradley, Hartsell's, Ala.  
Concub & Patsaliga Lumber Co., Luverne, Ala.  
G. N. Buchanan, Luverne, Ala.  
J. D. Cameron & Son, Mobile, Ala.  
Mobile Shingle Co., Mobile, Ala.  
Mountain & Sons, Mobile, Ala.  
C. G. Richards & Son, Mobile, Ala.  
Stewart & Butt, Mobile, Ala.  
Gulf States Lumber Co., Montgomery, Ala.  
D. Goulet & Co., Black Rock, Ark.  
F. McKay, Black Rock, Ark.  
Camden Shingle Mill Co., Camden, Ark.  
Price Lumber Co., Paragould, Ark.  
Corey & Ollinger, Bagdad, Fla.  
A. L. Wellman & Co., Beresford, Fla.  
Florida Shingle Mills, Brooksville, Fla.  
W. Springstead & Son, Brooksville, Fla.  
Mearns Shingle Mill, Davenport, Fla.  
Wm. A. McCann, Jacksonville, Fla.  
A. G. Russel, Oviedo, Fla.  
Little & Chapman, Rosewood, Fla.  
Atlanta Lumber Co., Atlanta, Ga.  
P. G. Grant, Atlanta, Ga.  
T. E. Collier, Cordele, Ga.  
King & Burch, Hawkinsville, Ga.  
Yarbrough & Perry, Fullington, Ga.  
Ino. Akers & Co., Scotland, Ga.  
Baily Bros., Toccoa, Ga.  
Mayfield Shingle Co., Wishart, Ga.  
Worth Lumber Co., Worth, Ga.  
G. W. Clere, Coaltion, Ky.  
Monroe Smith, McKinney, Ky.  
The J. H. Poe Shingle Co., Lake Charles, La.  
Harris & Thornton, Chattanooga, Tenn.  
L. Miller Shingle Co., Orange, Texas.  
Kizer Lumber Co., Texarkana, Texas.  
Fritz Sitterding, Richmond, Va.  
Gurley & Rogers, Norfolk, Va.  
Nottingham & Wrenn, Norfolk, Va.  
Ino. L. Roper Lumber Co., Norfolk, Va.

## Staves and Heading.

F. W. Sharp & Co., Larkinsville, Ala.  
J. R. Adams & Son, Longview, Ala.  
Montgomery Stave & Ldg. Co., Montgomery, Ala.  
J. C. Sheets & Co., Montgomery, Ala.  
P. V. Deland, Black Rock, Ark.  
Hammett & Bailey Stave Co., Greenway, Ark.  
Arkansas Stave Works, Greenway, Ark.  
J. F. Hasty & Son, Paragould, Ark.  
G. M. Rosegrant, Paragould, Ark.  
Wilson Bros., Piggott, Ark.  
Backus Bros., Pine Bluff, Ark.  
Little Rock Cooperage Co., Little Rock, Ark.  
Tampa Lumber Co., Tampa, Fla.  
Hagan & Platt, Pine Lev., Fla.

R. H. Brewer, Cedartown, Ga.  
Georgia & Tennessee Lumber Co., Laconte, Ga.  
F. H. Waring & Co., Cement, Ga.  
Allen & Briggs, Bardwell, Ky.  
F. B. Freeman, Cumberland Falls, Ky.  
Johnson & Overshiner, Hopkinsville, Ky.  
T. H. Mehan, Louisville, Ky.  
J. G. Evans & Co., Moorehead, Ky.  
Tippett & Co., Moorehead, Ky.  
Edward Farley, Paducah, Ky.  
Lester & Little, Sloans Valley, Ky.  
Pinuell & Webb, Somerset, Ky.  
George D. Eike, New Orleans, La.  
E. O. Felton, Ronceverte, W. Va.  
J. Beckwith & Co., Waverly, W. Va.

## Railroad Ties.

W. J. Felt, Greenup, Ky.  
G. & A. Kopp, Louisville, Ky.  
Southern Tie & Lumber Co., Louisville, Ky.  
James S. Pope, Halls, Md.  
P. L. Conquest & Co., Norfolk, Va.

## Spokes and Handles.

Jacob Wise & Son, Fulton, Ky.  
Paducah Handle Works, Paducah, Ky.  
Hendersonville Mfg. Co., Hendersonville, N. C.  
Rutherfordton Sp. & Hdl. Fy., Rutherfordton, N. C.  
C. J. Dundas, Statesville, N. C.  
Thomasville Spoke Works, Thomasville, N. C.  
Johnson Bros., Brownsville, Tenn.

## Southern Real Estate Directory.

For the convenience of the many readers of the MANUFACTURERS' RECORD it has been deemed advisable to collect under this head a reliable list of Realty Agencies of the Southern States. The value of such a list for the purpose of Ready Reference will immediately become apparent to all who are interested in the growth of this section.

## DISTRICT OF COLUMBIA.

WASHINGTON, D. C.—Chas. A. McEuen, Real Estate, Loans and Insurance. 1420 F. St.

## FLORIDA.

OCALA—J. V. Burke, Phosphate, Pine and Cypress Timber Lands. Loans negotiated.

## GEORGIA.

MACON—American Investment & Loan Co., owns valuable Real Estate in and around Macon. Real estate secured for investors.  
SAVANNAH—Jackson & Whitley, Counsellors at Law. Real Estate and Collection Department. W. G. Woodfin, manager.

## NORTH CAROLINA.

ROCKY MOUNT—Geo. S. Sartin, Town Lots, Acre Property, Farms.  
NORTH WILKESBORO—W. F. Trogdon, Town Lots and Farm Lands.  
OLD FORT—O. H. Blocker, Real Estate, Timber and Mineral Lands.  
RALEIGH—J. M. Broughton & Co., Real Estate, city and country realty.  
ROCKY MOUNT—Arrington & Arrington, Real Estate. Correspondence invited.  
WINSTON—E. R. Ains, Real Estate. First-class investments a specialty.

## TENNESSEE.

MEMPHIS—Hodge & Bro., 59 Madison St., Real Estate Agents and Dealers.

## VIRGINIA.

CHARLOTTESVILLE—J. C. McKennie & Co., Real Estate and Insurance Brokers.  
NEWPORT NEWS—Cottrell Company, Real Estate. Correspondence invited.  
NORFOLK—A. W. Cornick & Co., Real Estate Agents, 103 Main Street.

## PROPOSALS.

UNITED STATES ENGINEER OFFICE.  
WILMINGTON, N. C., November 12, 1892.  
SEALED PROPOSALS for building an earth dike at South Island Winyaw Bay, S. C., will be received at this office until 11 A. M., November 30, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application at this office.—W. S. STANTON, Major Corps of Engineers, U. S. A.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., Nov. 3, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 1st day of December, 1892, and opened immediately thereafter, for all the labor and materials required for the Trench Excavation, Foundations, Cut Stone and Brick Work of the Basement and Area Walls, Basement Columns, First Floor Beams, &c., for the U. S. Postoffice Building at Burlington, Iowa, in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Burlington, Iowa. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any and all bids or to waive any defect or informality in any bid if it is deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Trench Excavation, Foundations, Cut Stone and Brick Work of Basement and Area Walls, &c., for the U. S. Postoffice Building, Burlington, Iowa," and addressed to W. J. EDBROOKE, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., Nov. 3, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 24th day of November, 1892, and opened immediately thereafter, for all the labor and materials required for the Interior Finish of the U. S. Court-house, Postoffice and Custom-House Building at Bay City, Michigan, including Furring, Lathing, Plastering, Iron Stairs, Marble Work, Joinery

Work, Wood Flooring, Glass, Hardware, Painting, Polishing, &c., in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Bay City, Michigan. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid if it is deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposals for Interior Finish of the U. S. Court-house, Postoffice and Custom-House Building at Bay City, Michigan," and addressed to W. J. EDBROOKE, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., November 3, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 30th day of November, 1892, and opened immediately thereafter, for all the labor and materials required for the Trench Excavation, Foundations, Cut Stone Work and Brick Work, Iron and Wood Floor, Ceiling and Roof Construction, Roof Covering, etc., for the United States Postoffice building at Fremont, Neb., in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Fremont, Neb. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid if it is deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Trench Excavation, Foundations, Cut Stone and Brick Work, Iron and Wood Floor, Ceiling and Roof Construction, Roof Covering, etc., for the U. S. Postoffice Building at Fremont, Neb.," and addressed to W. J. EDBROOKE, Supervising Architect.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., November 3, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 6th day of December, 1892, and opened immediately thereafter, for all the labor and materials required to build complete the Superstructure (except plumbing, heating apparatus and approaches) of the U. S. Court House and Postoffice Building at Martinsburg, W. Va., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Martinsburg, W. Va. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it is deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the erection and completion (except plumbing, heating apparatus and approaches) of the U. S. Court House and Postoffice Building at Martinsburg, W. Va., and addressed to W. J. EDBROOKE, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., November 2, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 21st day of December, 1892, and opened immediately thereafter, for all the labor and materials required for the Cut Stone and Brick Work of the Superstructure of the U. S. Postoffice, etc., building at Worcester, Mass., in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Worcester, Mass. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Cut Stone and Brick Work of the Superstructure of the U. S. Postoffice, etc., Building at Worcester, Mass.," and addressed to W. J. EDBROOKE, Supervising Architect.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., November 5th, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 8th day of December, 1892, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except plumbing and heating apparatus) of the extension to the U. S. Court-house, Postoffice, etc., Building at Dallas, Texas, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Dallas, Texas. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid if it is deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Erection and Completion (except plumbing and heating apparatus) of the Extension to the U. S. Court-house, Postoffice, etc., Building at Dallas, Texas," and addressed to W. J. EDBROOKE, Supervising Architect.

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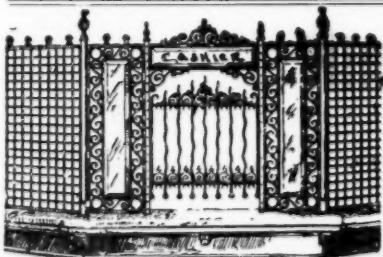
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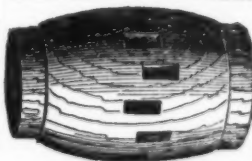
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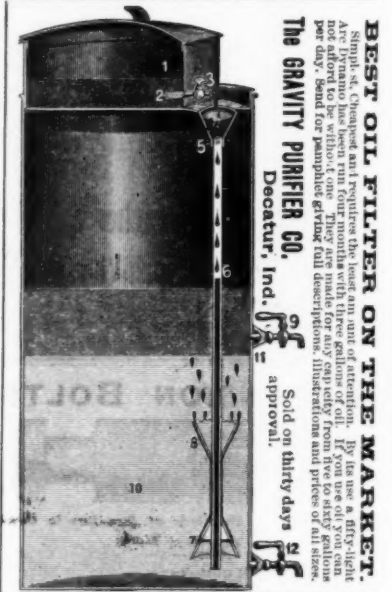
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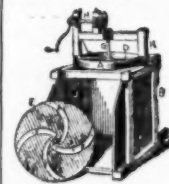
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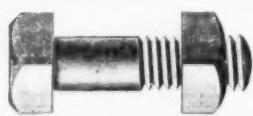
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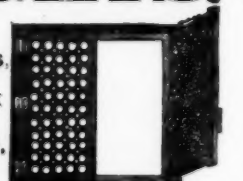


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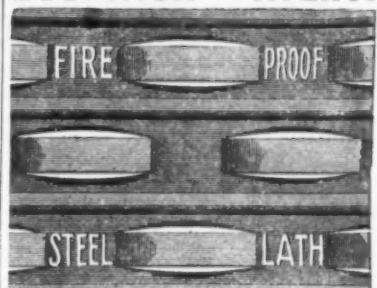
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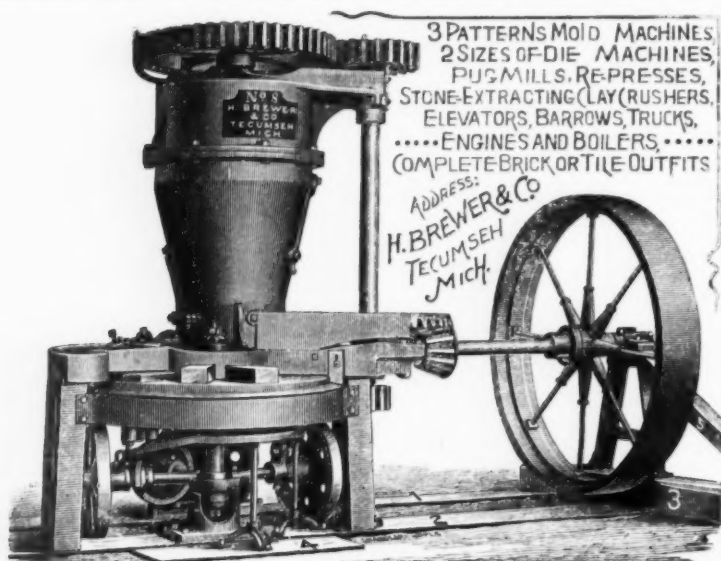
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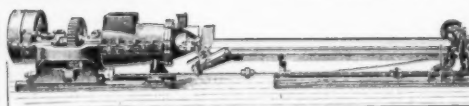
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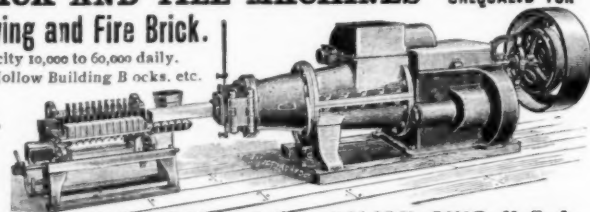
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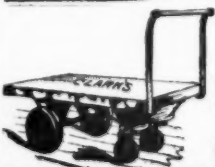


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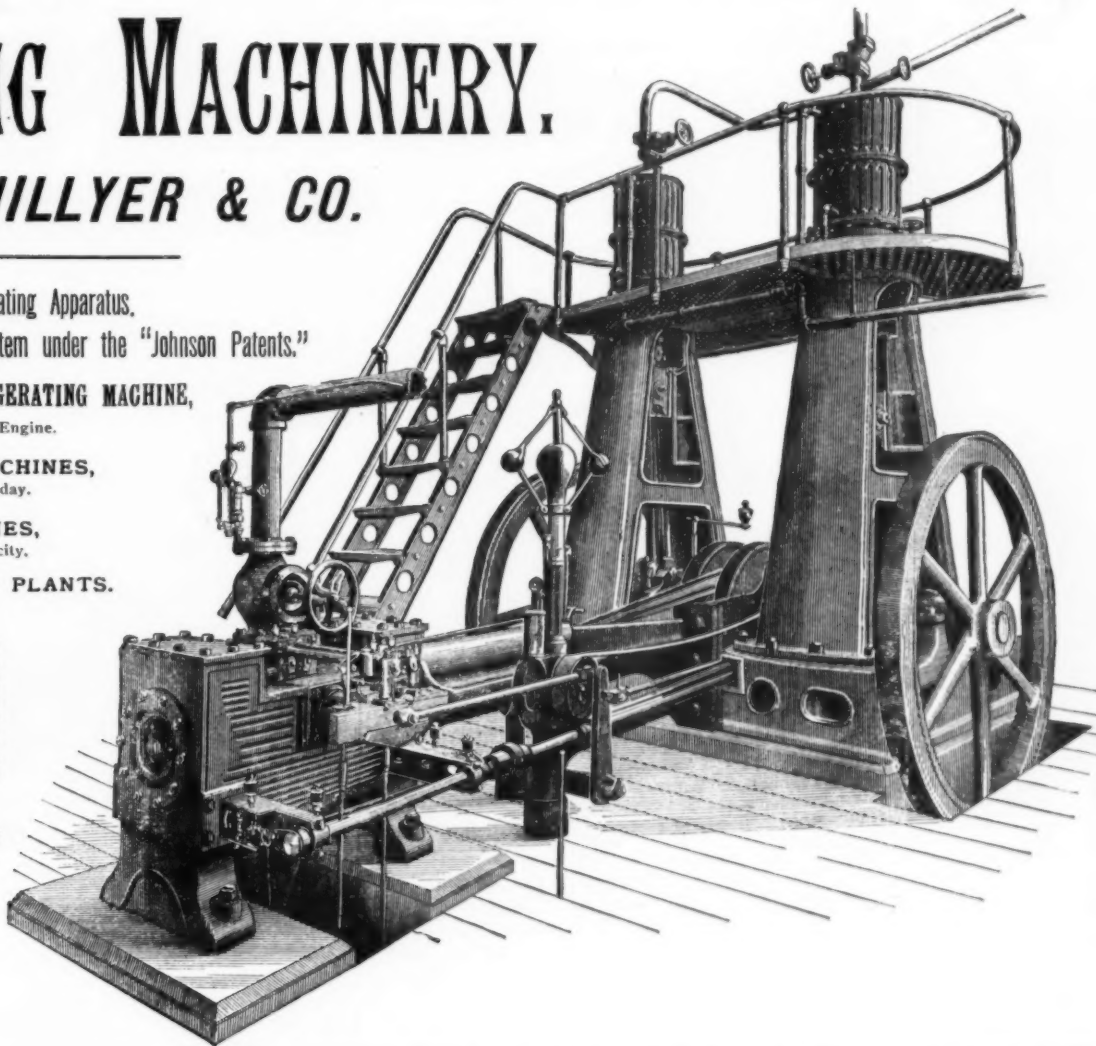
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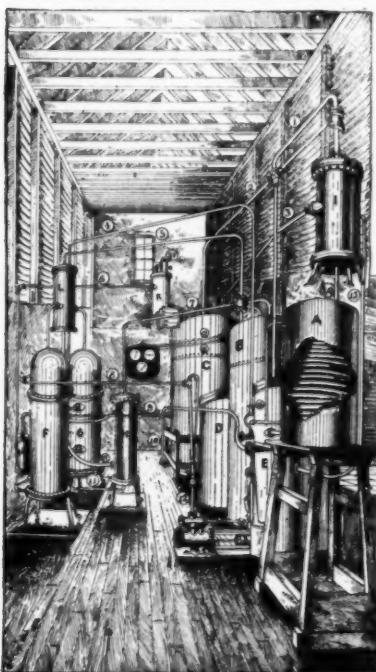
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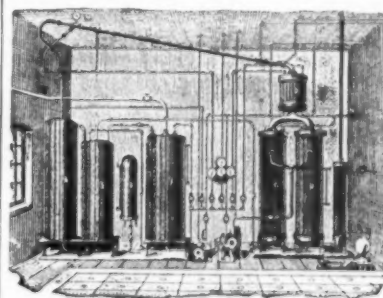
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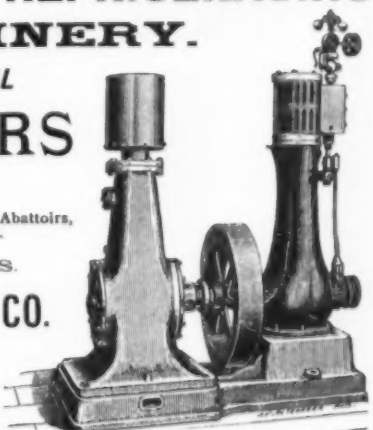
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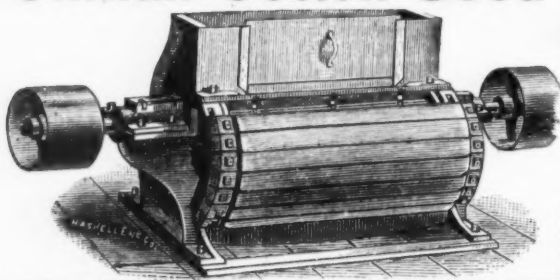
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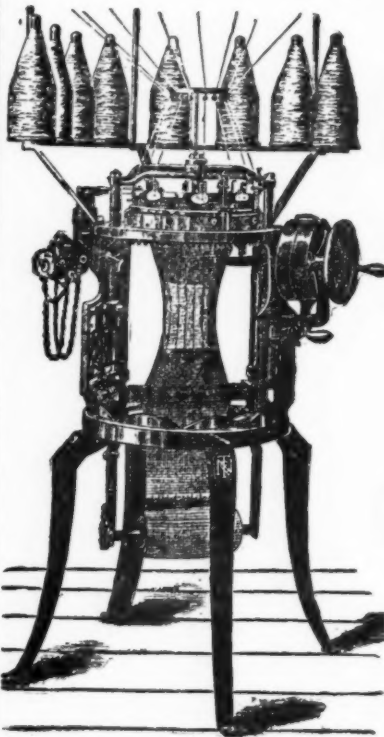
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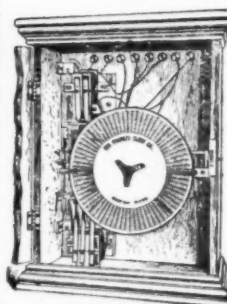
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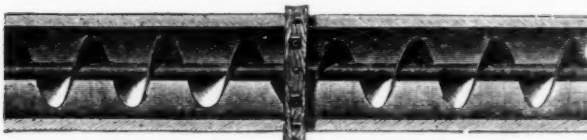
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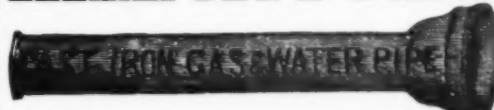
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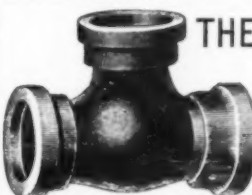
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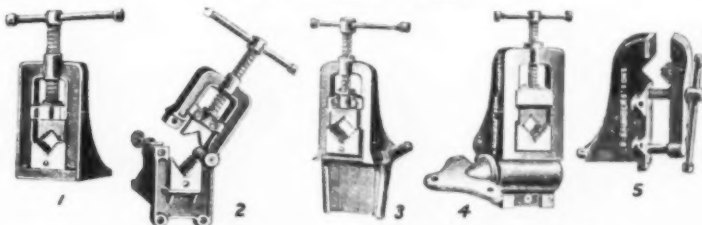
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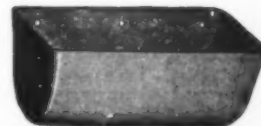
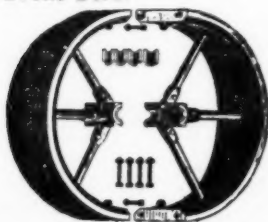
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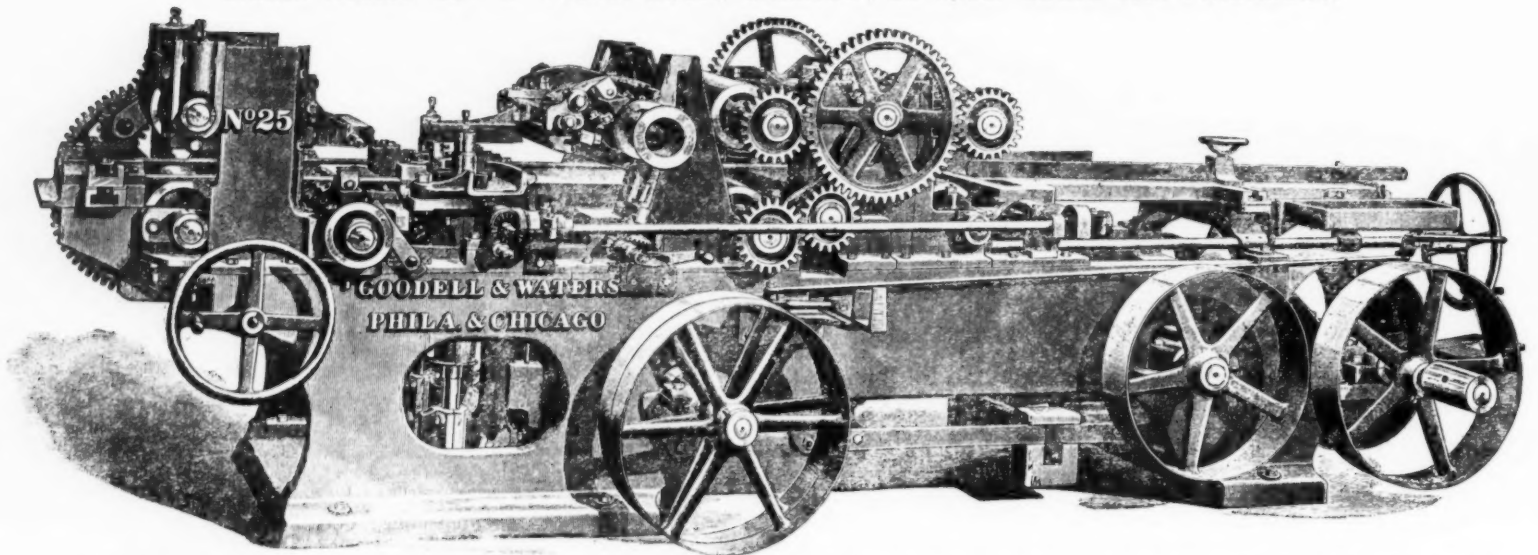
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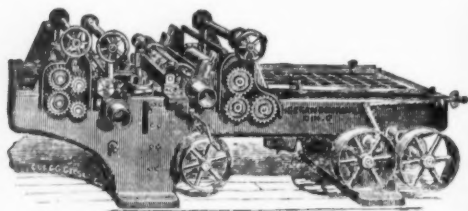
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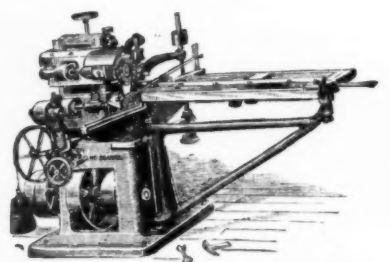
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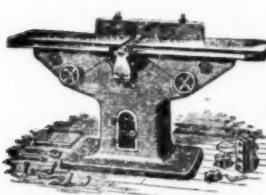
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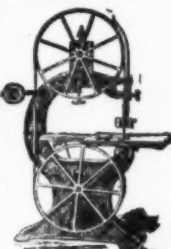
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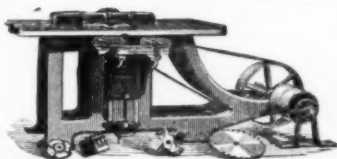
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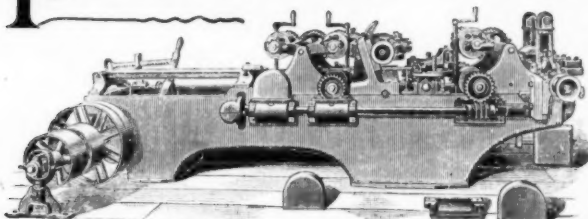
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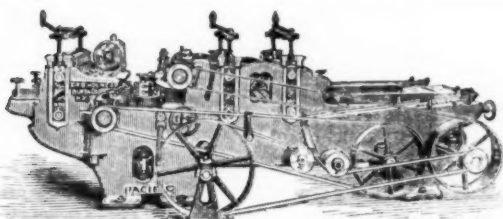
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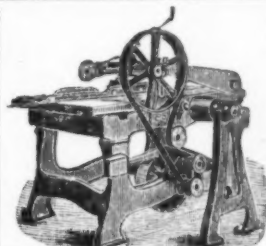
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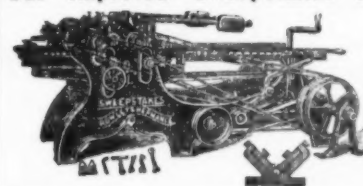
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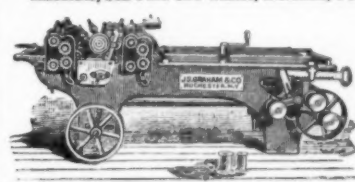
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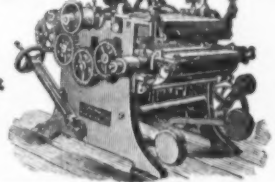
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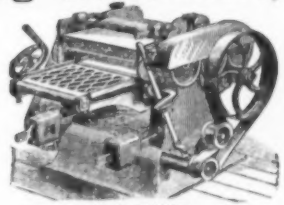
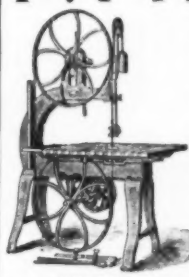
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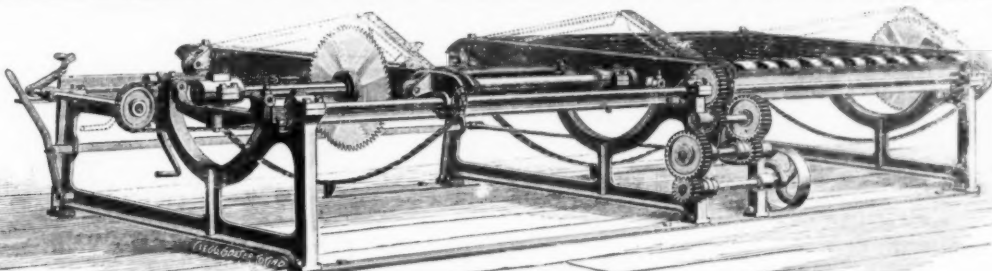
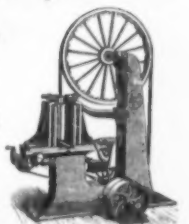
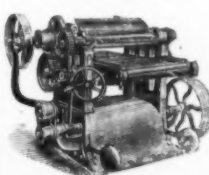
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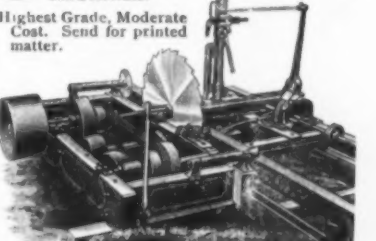
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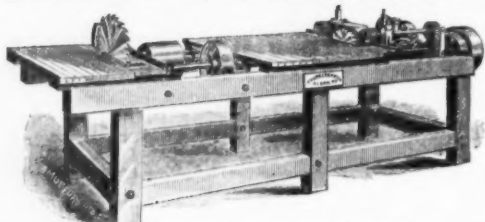
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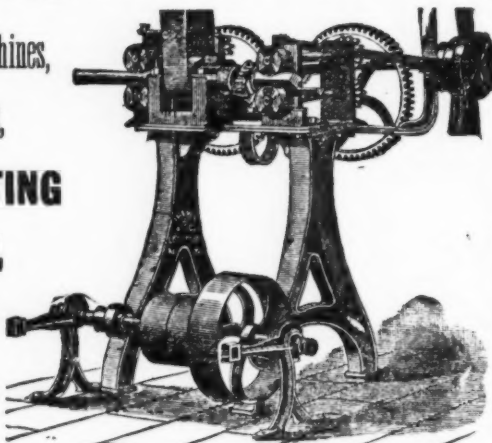
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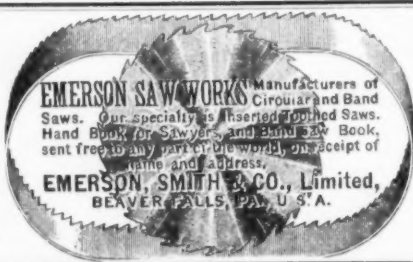
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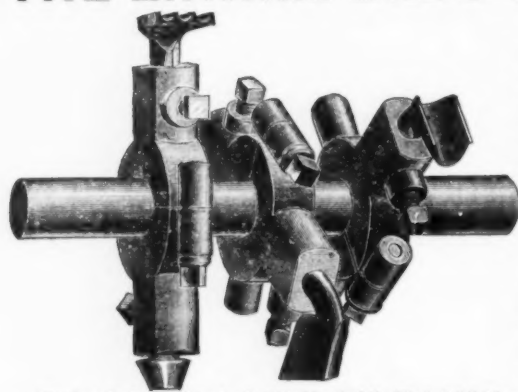
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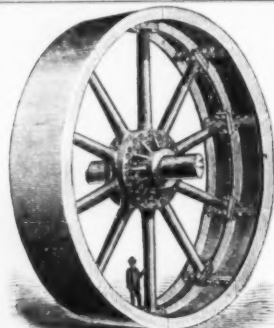


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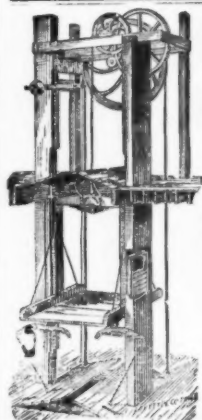
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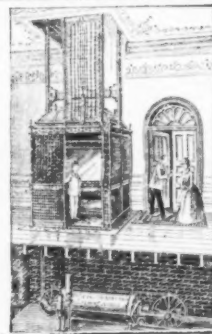
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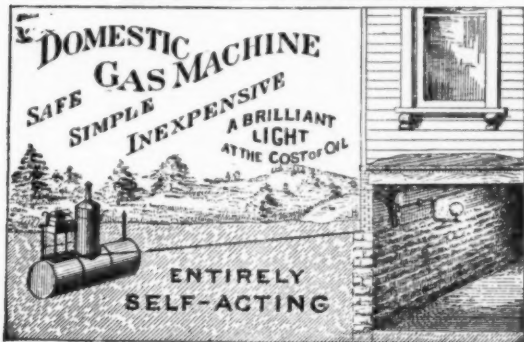
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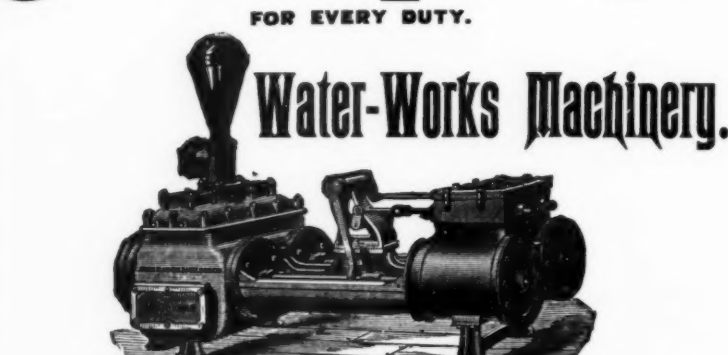
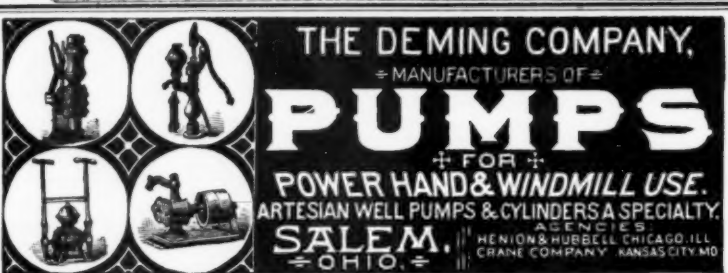
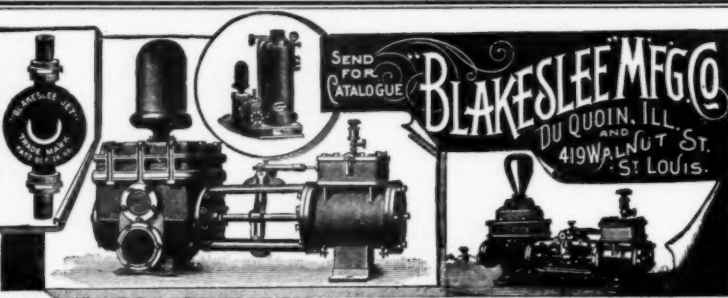
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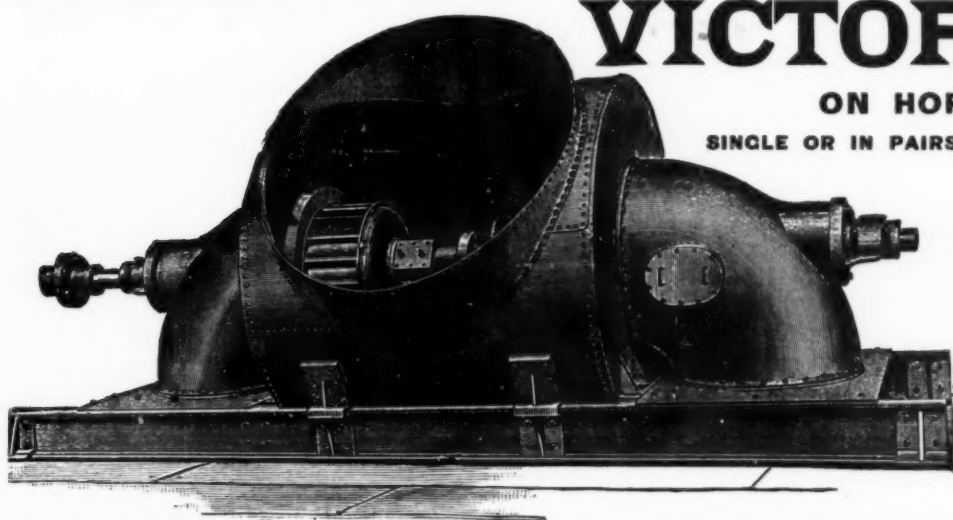
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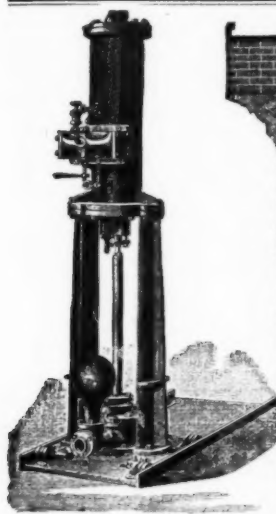
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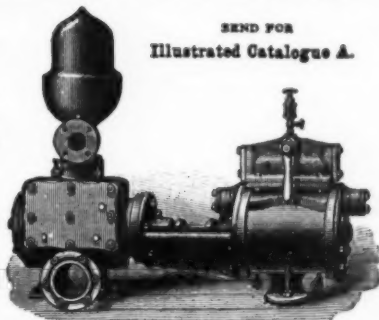


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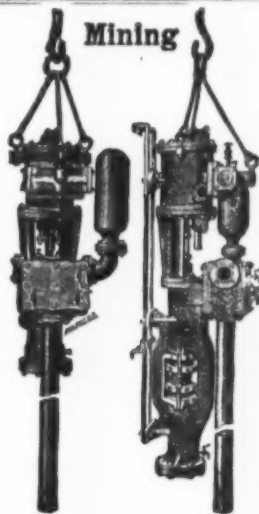
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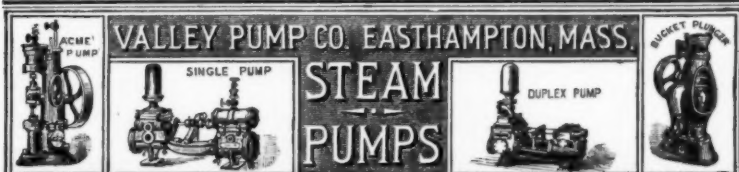
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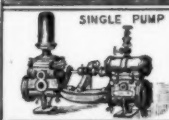
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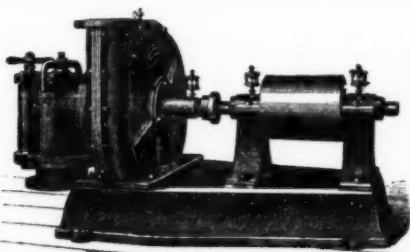


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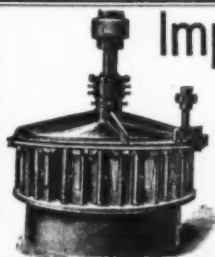
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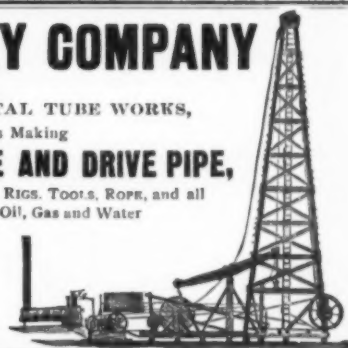
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# NORTH WILKESBORO,

## NORTH CAROLINA,

One of the Conspicuous Successes of the Year in Town Building,  
Presents the Following Record:

Population March 4, 1891, actual count, 48.

Population March 4, 1892, actual count, 348.

Gain in one year 625 per cent.

Townsite purchased November 11, 1890; act of incorporation passed by the Legislature, March 4, 1891; first lot sold at private sale, May 12, 1891. Within the first year of its existence ten miles of streets have been graded, and \$22,000 spent in public improvements. Where prior to March 4, 1891, there was only a farm settlement without pretensions to being even a village, there is to-day a thriving, busy, growing, trading and manufacturing center, with

A Large Well-Kept Hotel,  
The Bank of North Wilkesboro, \$40,000 Capital,  
A large Livery and Sale Stable,  
Two Large Wholesale Stores,  
One Hardware Store,  
One Furniture Store,  
Ten General Merchandise Stores,  
Three Saw Mills, Sash and Blind Factories,  
One Foundry and Machine Shop,  
A Handsome, Well-Edited, Home Print Newspaper, The North Wilkesboro News,  
One School,  
Two Churches Under Way,

Two Brick Yards in operation, and a number of other enterprises practically secured.

Arrangements are about completed for a Woolen Mill.

A large iron front brick block, containing Bank Building, two Store Rooms, Opera House, and Printing Office; A graded School Building and an Iron Bridge across the Yadkin River, in the Eastern part of town, will be completed during the spring and summer.

Turnpike roads to Tennessee and Virginia are about completed; county roads leading into town are being improved and numerous good new ones built, with the intention of making this the center for all the wagon trade of this section.

A tobacco warehouse for the sale of the high grade leaf of this district will be built during the summer, so as to give a home market for the tobacco crop that will be grown this year.

*Compare this record with that of any other new tow you have heard of during the past dull season.*

## NORTH WILKESBORO,

Is 75 miles west of Winston-Salem, at the present terminus of the Northwestern North Carolina Railroad, which when ultimately completed to Bristol, Tenn., will give the shortest route between Norfolk and Cincinnati. North Wilkesboro is the most important trading point between Winston-Salem and Bristol, and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States Postal Map on an air line 75 miles southeast of Bristol, 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southeast of Mt. Airy, and 80 miles south of the Norfolk & Western Railroad, in the valley of the Yadkin, between the Brushy Mountains on the South and the Blue Ridge on the North. Climate, healthfulness, water, drainage and location unsurpassed by any town in North Carolina.

The townsite consists of 1,088 acres, located, by the way on a farm originally owned by General John B. Gordon's grandfather. The first public auction sale of lots was held December 2, 1891, and 188 lots were sold. Purchasers have in many cases been able to resell at a handsome profit. The company has sold 50 lots at private sale since then, on many of which houses are now being erected. It is a significant fact that among the business buildings erected a large per cent. are substantial brick structures, while for architectural beauty and cost many of the residences are much superior to those usually found in a town so young.

At the second auction sale, May 11th, 1892, 35 business lots and 44 residence lots sold for \$16,490, an average of \$8.35 per front foot, which is \$2.53 per front foot (or 44 per cent.) more than the average at the sale last December, which was the best sale made in North Carolina during last year. Since the sale, a contract has been closed for the location of another large saw mill, planing mill, sash, door and blind factory combined, which will do a large shipping business. A contract is closed for the location of extract works with a capital stock of \$300,000. The plant will cost \$125,000 and will cover six acres of land. Twelve families from the North will move down. The company will erect a large electric-light plant in connection with the extract works. North Wilkesboro will get there and will not be long doing so.

Through the townsite runs a stratum of serpentine stone, 200 feet in width, and also a bed of iron ore equal in quality to that of Cranberry. The Town Company also owns 4,100 acres of mineral, granite and timber lands in Wilkes County. It is probable that the work of developing the great mineral and timber interests of the section will be commenced in a short time, and on an extensive scale.

*Sites will be donated and stock subscribed to such manufacturing enterprises as may be advantageously located here.*

The policy of the Company is a most liberal one in this respect, it being determined to aid all legitimate enterprises to any reasonable extent. There are 328 miles of water courses within the borders of Wilkes County, furnishing to the vicinity of North Wilkesboro a water power as great as Fall River. The climate, while not moist, is neither harsh nor dry, and is especially suitable to the spinning of fine cotton yarns, such as cannot be made in the extreme South or North. There is also a fine opportunity here for bleacheries, to the establishment of which at Southern points there is a tendency at present. As they can't go where sluggish streams, impregnated with vegetable matter, abound, the quick flowing streams of clear mountain water, so numerous about North Wilkesboro, afford everything desired. Numerous other industries will do well at North Wilkesboro, and will be most substantially encouraged to locate there.

**Capitalists, Home Seekers, Health Seekers, Manufacturers of wood and iron, and many other industrial workers may well investigate North Wilkesboro's advantages.**

The above-described townsite and other property belongs to the Winston Land & Improvement Co., which was chartered by act of Legislature, session of 1887; ratified March 4, 1887, chapter 82. Authorized capital \$1,000,000. Present capital stock \$125,000, all subscribed and paid up.

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FRONT ROYAL, VIRGINIA.

FOR "CLASSIFIED INDEX" SEE PAGES 3, 5 AND 7.

\* Not in this issue.



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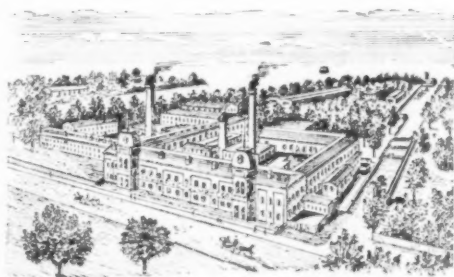
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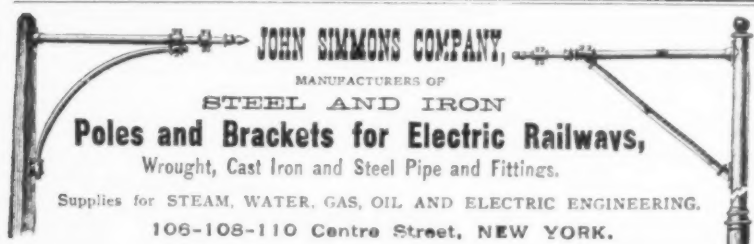
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APPENDICES: Appendix A. Electric Railway vs. Telephone Decisions. B. Instructions to Linemen. C. Engineer's Log Book. D. Classification of Expenditures of Electric Street Railways. E. Concerning Lightning Protection, by Prof. Elias Thomson.

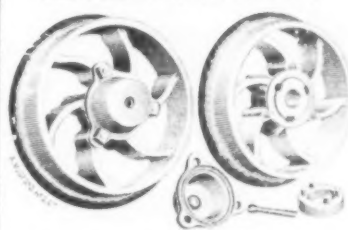
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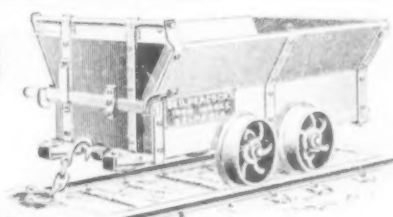
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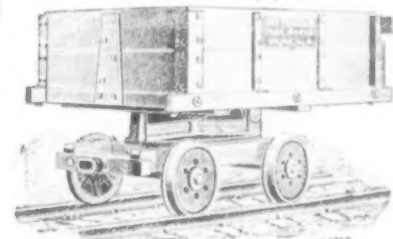
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The Crawford Mill works more cheaply, and saves from 20 to 30 per cent. more gold than the ordinary stamp-mill, while it also successfully treats at less than \$1.00 per ton many refractory ores otherwise impossible to treat, save by costly chemical processes. It renders possible the working of abandoned mines. Even tailings can be profitably worked. By its use there are savings on every hand. First cost of purchase—about one-half that of stamps. Less labor—one man can run ten mills with daily capacity of 100 tons. Less water, less power and less expense in transportation, owing to lighter weight and portable character. A machine of the smaller size can be carried in a farm wagon. Thus, mining regions heretofore inaccessible can be reached. The parts being interchangeable, no mechanical skill is necessary in repairing.

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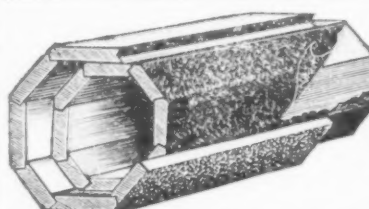
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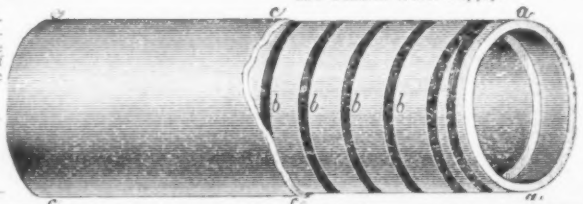
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